The Builder.

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THE pages of THE BUILDER contain a larger amount of information, connected with the Metropolitan Buildings Act, than is to be found in any other work. They have been open always to communications on the subject; and we have from time to time laid before the public the more important awards and directions issued by the official referees, and all the modifications of the Act, ordered on their recommendation, by the Commissioners of Works and Buildings. Our anxious desire has been to render the operations of the new Act as extensively known as possible, to explain any doubtful points as they arose, and so prevent litigation: to induce the expression of public opinion with a view to an early improvement of the Act, and, by a vigilant *surveillance* of those who were in authority, to aid in securing a proper administration of it. Our efforts in this respect, we say it with gratitude, have been favourably viewed on all hands.

A right honourable lord, interested officially in the administration of the Act, has been pleased to offer his approbation of the conduct of THE BUILDER, and to express an opinion of "its practical utility;" and from the public generally, we could give many gratifying proofs of confidence, if we thought it right to do so. Even at the risk of a charge of egotism, however, we cannot avoid availing ourselves of this opportunity, of mentioning one unexpected testimonial, recently received from a class of our readers, for whom, though humble, we have much respect, and whose interests and progress we desire, with all earnestness and sincerity to advance. We allude to a letter from the Institution of Builders Foremen (signed W. Allard, secretary), which we should print, if it were not personally flattering.

We have been led without wishing it, away from the simple object of the present notice, which was to say, that from this time forward our opportunities for illustrating the workings of the Buildings Act, will be much greater even than they have been. EVERY AWARD AND CERTIFICATE PUBLISHED BY THE REFEREES, WILL COME BEFORE US THE MOMENT IT IS ISSUED, and the gist of all that are important, will be immediately laid before our readers. Careful references to these cases will be given in the index, so that the volume when completed, will be found of the greatest importance, indeed, we may almost say, indispensable, not merely by architects and builders, but by all who are interested in house property, as owners and holders.

The following are amongst those recently issued:—

CHIMNEY-BARS, CURB-ROOFS, DRAINS, AND COPING.

Mr. T. H. Wyatt gave information against Mr. W. Bellamy, that in building various dwelling-houses in Hackney, he had "done certain matters or things contrary to the provisions of the said Act, namely, having formed certain chimney openings, the jambs whereof project from the face of the wall more than 4½ inches, and the front on either side is less in width than two-thirds of such opening, without inserting proper iron chimney-bars; and having built the walls of the said houses to a height of 10 feet, without having properly built and made good the drains thereof; and having built the party-walls between the said houses, so as not to project 18 inches in front of the curb-roof; and without being coped with brick on edge in cement, or stone, or being plastered with cement."

The referees, by their award, ordered, "that the said William Bellamy do forthwith provide and let in an iron bar over the opening of every chimney in the said houses (not already provided with the same), as directed by schedule F of the said Act; and that the said William Bellamy do forthwith pull down and replace, by a proper external wall, of the thickness of 13 inches at the least, all the lower and nearly vertical portion of the curbed roof in the back of each of the said four houses, or do make the same conformable to the said Act by adding, upon stone corbels, and to the satisfaction of the surveyor of the district, so much to the party-walls between such roofs as that the said party-walls shall project, at the least, 1 foot and 6 inches beyond every such roof, measured at a right angle with the back of the rafters of such roof, or do in some other way make the same conformable to the said Act; and that the said William Bellamy do forthwith finish the top of each of the said party-walls, with some properly-secured and sufficient water-proof and fire-proof covering, as directed by the third part of schedule D of the said Act.

As regards drainage, the award sets forth what may be important to many of our readers: it states, that "upon the express understanding that it is intended to make sewers, and that the same are now about to be made, and that the said William Bellamy has paid, or has engaged to pay, seven shillings per foot towards the expenses of the said sewers or part thereof, and that it is his intention to form proper drains, from all of the said houses into such sewers as soon as the same shall be made, and inasmuch as many instances have occurred, in which buildings are commenced in streets and roads, in which sewers have not been built, but in which it is the declared intention of the parties immediately to build sewers: and inasmuch as the said official referees are of opinion, that the intention of the said Act to promote the improvement of the drainage of buildings would be defeated if, in such cases, cesspools were made, and the buildings drained to such cesspools instead of sewers, and have therefore determined to recommend to the Commissioners of Works and Buildings a modification of the said rule, to the effect that it shall be lawful in such cases to defer the making of such drains, with the special consent of the official referees first had and obtained,"—they will make no direction thereon, until the result of such recommendation be known.

TEMPORARY WORKSHOPS.

Mr. S. Fowler having erected a workshop at Bermondsey for temporary use, not in accordance with the Act (through ignorance), received notice from the district surveyor to that effect, and appealed to the referees.

It was admitted that the external inclosures were not wholly formed of brick or of stone; "that the said Building is detached from any other building, and that it is separated from the next adjoining premises by a brick wall; that the roof is covered with pantiles, and that no fire-place has been built therein; and further, that the said building has been built as a temporary workshop for the execution of a pressing contract, and that it will be pulled down in the course of four or five months from the date of hearing."

Mr. Hosking determined "that the building in question is not conformable to the said Act, but I defer to make any direction thereon for a period of six months from the 22nd day of September last."

INSULATED BUILDINGS.

With reference to an application from Mr. Lee, for leave to erect smiths' and coopers' shops (of timber and wood-work) at Wandsworth, at the distance of 22 feet from one building, and 25 feet from another, both in his own occupation, the referees awarded, "that if the buildings be in the same possession and occupation with the proposed building, and be themselves insulated within the meaning of the said Act, and if the proposed building be so situated that there be not within 30 feet therefrom, any land or any building not in the same possession and occupation therewith, then such proposed building will be an insulated building within the meaning of the said Act."

Wood construction was therefore permitted.

SLAUGHTER-HOUSES.

With regard to a request by Mr. Weymouth, to know, amongst other things, whether a small slaughter-house, at Crouch End, Hornsey, was a building of such a nature that, in accordance with the 55th section of the Act, no structure could be erected nearer to it than 50 feet, the referees decided, "that if the slaughter-house be used for the slaughtering of animals for human food only, and be not used for the business of a general slaughterer, but in connection with the trade of a retail butcher, and particularly with the trade of a butcher's shop thereto adjoining, then the said slaughter-house is not to be deemed to be a building used for the business of a slaughterer, or for a business noxious or offensive within the meaning of the said Act."

OBSTRUCTION OF LIGHT AND AIR.

Messrs. Elger and Kelk, being about to erect premises at the back of No. 16, St. James's-square, which Mr. Howell, the owner of No. 15, considered would obstruct the light and air of his premises, applied through his architect, Mr. Marsh Nelson, for the interference of the official referees to prevent the builders from proceeding. The opinion of Messrs. Barry, Hardwick, Tite, and Pennethorne confirmed his view as to the obstruction. An area was to be left as prescribed by the Act. It was contended for Mr. Howell that if the referees were called on by the Act (as is the case) to prevent any *projections* from a wall which would obstruct the light and air, or be injurious to the adjoining houses, the Act could not permit the wall itself to be built or raised, so as to effect in a greater degree, that which the projections from it would do in a smaller degree.

The referees determined that so far as related to the interruption of light and air, they had no jurisdiction in the matter referred to them.

SCHOOLS AT CARDIFF.—A building for a day-school on the British system is now being erected in Cardiff by subscription, principally of the Baptists in that town and the vicinity. The style is Tudor. Mr. Clinton is the architect.

THE ROYAL SOCIETY.—The session will commence on Thursday next, the 20th instant. The anniversary meeting will be held on Monday, December 1st.

CLAY SOILS AND CONCRETE.

Sir,—The observations in No. 142 of The Builder, by Henry Liddell, on the dangers accruing to buildings erected on clay soils, without due precautions being given to the foundations, and the instances which he brings forward of the fatal results exemplified in the buildings about Hull, are of serious importance, and merit the consideration of all practical persons. I will venture to make a few additional remarks.

In all foundations, but especially in uncertain soils, a great degree of security is obtained by making the footings and lower part of the walls of increased thickness. The foundations, from the better bond thus obtained, are less liable to fracture and are more capable of bearing heavy weights by the greater spread of surface over which they are diffused. In illustration of the security thus obtained, the use of snow boots in Canada has been referred to, which extend, almost like sledges, under the feet, and thus effectually prevent the impression which the small extent of the bearing surface of a foot would inevitably make. By the diffusion of the weight scarcely any compression takes place, and the same result may be obtained by similar means in soft or clayey soils, by extending the width of the footings.

In clay soils, another point to be attended to, is that the foundations be of sufficient *depth*, to prevent the soil on which they are constructed being affected by the changes of the weather, from wet to dry, or otherwise. The cracking of these soils by the heat of summer, and their swampiness in winter is well known. If it is necessary for an architect to take into consideration the effect of the dilatation of iron by heat, how much more should he consider the effect which such changes have upon a soil, the very foundation of his building. In clay lands, I think the bottom of the footings should never be less than five feet below the surface, to avoid the effects of temperature. The drainage for buildings also on these soils should not be made *below* the level of the foundations, as great injury is likely to arise from withdrawing the natural moisture of the ground beneath them. I have known serious injury to arise, and a building to be fractured in all directions, from the sinking of a well in a clay soil, whereby the under soil was drained of its moisture.

Your correspondent alludes to concrete, and doubtless it is a most efficient means for securing good foundations, but I apprehend its beneficial effect arises, in a great measure, from its enabling the builder to effect the two conditions above named, at a moderate expense; viz. of extending the width of the footings and increasing the depth of the underground work: —for it must be remembered that the concrete itself is only an artificial wall, and subject therefore to all the contingencies which may affect the soil on which it rests. In addition to concrete on clay soils, I have adopted the plan (and with much success) of building all the footings four or six courses in height of brickwork in cement, each course strongly bonded with iron hooping, laid both longitudinally and diagonally. Iron hooping has been looked upon so much as a mere substitute for wood bond, that its advantages of being a connecting tie to the individual bricks, and the increased mutual strength which they thereby obtain, are not sufficiently appreciated. I make this observation, as the use of iron hooping in footings has been objected to as unnecessary and useless by several practical builders; but I hold that the footings thus constructed of sound stocks and cement, linked together by iron hooping, form a stronger and more compact bearing surface than could be obtained by Yorkshire landings. The connecting bond is in no part broken throughout the footings, as must be the case with landings.

I should have supposed the use of concrete was too well known to need your correspondent's inquiry, had I not myself found a difficulty sometimes of getting it executed in the country. In London, the ballast from the river bed is invariably used, but in the country, any clean pit gravel, fragments of stone and brick, the shingle from the sea-shore, and broken flints, may all be advantageously used, mixed with coarse, rough sand sufficient to fill up the interstices. Six parts of this material with one of ground lime is recommended; or, if the lime is strong and hydraulic, a smaller portion of it may be used. As it is difficult in the country to obtain ground lime readily, a labourer can be set to pound it into powder. To slake it with the other material is wasteful. I subjoin a translation from one of the chapters in Philibert de L'Ome's work, published in 1568, giving an account of the use of concrete in his time, which I have not seen noticed in any publication on the subject.

2nd Book, Chapter 2:—"How foundations are to be made, when large stones cannot be obtained, for building bridges across rivers, harbours on the sea-coast, and other works in marshes and in water.

"The excavations being made, whether for houses, harbours, bridges, or buildings, in a marshy soil, or even on land, and if being deep and wide, stones of a large size cannot be obtained for the foundations, the best and surest method is to prepare a *mortar*, composed of quick-lime recently burnt, as described in the first book, mixed with a river sand, which contains a quantity of pebbles of all sizes, provided the largest be not larger than the fist, or the size of an egg, and that the whole be also interspersed with smaller pebbles and gravel, such as are usually found in rivers. This material, moistened with water and mingled with lime, serves both for mortar and stone, and mixed with a sufficient quantity of sand, must be thrown at once into the excavation without any labour from the mason's trowel. It is only necessary to dress it with the spade. Having thrown in a layer, about half a foot in thickness, large single stones may also be thrown in, and mixed here and there with it as may be convenient, but without touching each other; after this, you will again throw upon them the mortar of pebbles and gravel as before done, and this must be repeated till the excavation is full, throwing the whole from above with all sorts of small pebbles. This composition thus executed hardens and solidifies so firmly in the foundation, that being heaped up in a mass, and bound together, it becomes a uniform body or rock, such as Nature forms, of a single block, and it is so strong and hard, that when dry, it cannot be broken either by piles or any other instrument, nor can the pebbles be separated from it without breaking them in pieces. The reason is, that the excavations, retaining their humidity dissolve the mortar and prevent its drying for some time, so that the large gravel and pebbles during this period imbibe and draw in the fatness and power of the lime even to their very centre, as I have myself observed; for on examining the pebbles thus employed, and breaking them, I have found them white to their very centre, and of the same colour as the lime. Quarry stones can do the same, for they attract the fatness and power of the lime. A foundation of small size cannot be executed in this manner, as the stones or pebbles would dry too rapidly, and before they had time to absorb the virtue of the lime. Lime made from hard stone or marble is the most penetrating and proper for this purpose, but observe especially that soft free-stone lime is useless."

It is needless to continue the extract, and your readers will probably not understand the old architect's philosophy; but the chapter is interesting as evidencing the use of a material three centuries ago, which we are inclined to consider a modern discovery. I am, Sir, &c.

October, 1845. T. L.

*** In the prize essay on concrete, published in the first part of "Transactions of Institute of British Architects," 1836, numerous instances of the use of concrete in very early times are cited. In reply to our first correspondent, Mr. Liddell, we give the following brief extracts from the essay in question.

"The concrete now generally employed is compounded of Thames ballast and Dorking lime, in certain proportions, varying, according to the opinion of the user and goodness of the materials, from one of lime and four of ballast, to one of lime and twelve of ballast. They are sometimes mixed together, slaked as mortar, and thrown into the foundation from a certain height; sometimes the ballast is laid on the site of the intended erection, and the lime poured over it, in the shape of grout; while at other times the spaces to be concreted are filled with water, and the lime and ballast, having been first mixed in proper proportions, are thrown into it dry. Instead of gravel, Kentish-rubble and broken pieces of granite, properly grouted, have been extensively employed, more especially by Sir John Soane, who has used a preparation of this sort for most of the public buildings in Westminster executed under his direction; viz., at the Law Courts, the additional buildings to the House of Lords, the library of the House of Commons, the Board of Trade and Privy Council Offices, the State-Paper Office, and others. The foundations of these edifices were formed of granite, or other hard stone, broken in small pieces (none exceeding the size of an ordinary hen's egg) and laid in layers, closely rammed, and grouted every third layer with a grout composed of Dorking lime and sharp river-sand; other layers of similar pieces of stone were then laid, and rammed and grouted as before; and so the operation was repeated, until the required thickness was attained."

"In order properly to apportion the quantity of lime necessary to be used with the ballast, it will be well that you ask yourself this question: What are you in reality doing when forming a mass of concrete? or rather, what *ought* to be done? To this the answer must be, that you are building a stone wall.

The pebbles, then, are *the materials with which it is to be built*, and must be regarded only in that light; so that in considering the quantity of lime necessary to be added, in order to form a *proper mortar* wherewith to unite them, regard must alone be had to the sand contained in the ballast, and according to the quantity and quality of that ingredient must be apportioned the lime. It is true, that upon the proportion borne by the pebbles to the mortar, the strength and goodness of the concrete materially depend; but this, except under peculiar circumstances, must but little interfere with the preparation of the mortar: it is another question separately to be considered.

Now, practice and a variety of experiments have shewn that Dorking stone lime, being ordinarily good, will form a most excellent mortar when mixed with three times its own quantity, by measure, of sand; and although it is quite certain that if it be well burned, ground, and used hot—and thus it *must always* be for concrete—it will make excellent mortar when mixed with four of sand,* even better if the lime be powerful than with less, this may serve us as a generally admitted good proportion.†

With respect to the amount of stones essential to a good concrete, it is generally maintained by those practical men who have thought upon the subject—unfortunately but few—that it should be double that of the sand by measure; and my own experience fully bears out this belief."

Various experiments shewed that *two parts of stones and one of sand, with sufficient lime—dependant on the quality of the materials—to make good mortar with the latter, formed the best concrete.*

Thames ballast, of the best sort, consists, nearly, of one of sand and two of stones; in ordinary practice, one of lime to seven of ballast is used, and found amply sufficient.

ARCHITECTURE AND ART IN MANCHESTER.

After a long period of depression, art in Manchester has sprung into vigorous existence. The tide of prosperity in trade has influenced architecture, and the town is now a striking example of prevailing good taste. An increased want of buildings of every description, churches, houses, warehouses, manufactories, and public buildings; the formation of several new and large streets, and the widening of old ones, have created a demand for the services of architects, such as we do not recollect any other instance of. A new school of architects has sprung up, including a large number of indiyiduals, many of them very young men; and it is greatly to the credit of the merchants of the town, that they have had the judgment to use the services of architects, in buildings, in which they are seldom appealed to, and to the credit of the architects, that these appeals

* It was usually thus compounded by the late John Nash, Esq.

† Vitruvius says the Romans used three parts of sand to one of lime; but Pliny says four to one. There is little doubt but that their opinions were as various as are ours. Dr. Higgins recommends one of lime *by weight* to eight of sand, in his "Treatise on Calcareous Cements," p. 760.

have been replied to by them, almost universally, in the best manner, and so as to confirm the impression of the advantages to be derived from professional assistance. The speculative mania has infected Manchester, probably in a greater degree than any other place in the kingdom; and it would be easy to name several most remarkable instances of good fortune. Tradesmen, attorneys, surgeons, dentists, and many more needy adventurers of one time, we now find metamorphosed, every man of them, into share-brokers. They are the monarchs of the day; note-book and pencil in hand, they crowd the Exchange, and reap all the advantages of the lucky game. The quondam shop-boy, to whom a yard-stick was the familiar instrument of success, and who sped from his ill-digested dinner punctually to the hour of two, now books the name of a new client, and whistles as he books it, or alights at the door of the stock-exchange, in all the consciousness of well-appointed horse-flesh. The man of lint and bandages, whose early career was brightened only by an occasional tooth, now invites you to dine at his country-house, and calls for you in a carriage, which people look at, as it runs by. Amidst all this good fortune, in which all, for the present, seem to be partakers, there are many who condemn, and who talk of impending ruin, yet none who show the influence of example; few to recollect a time when shares were at a discount, and scrip could be had for asking. People consider the questionable issue out of the approaching climax, but, with the infatuation of the hazard-table, hope, that one more cast may yet yield gain. In drawing attention to the prosperous state of architecture in Manchester, we have thought it necessary thus to allude to the causes, which might soon there, as well as elsewhere, produce a state of things the exact reverse; and should the scarcity of money be felt for some period to come, as seems too probable, the arts will be affected to a disastrous extent. But to return to our more immediate object.

It is not only in the *art* of architecture, that great progress has lately been made; an equal advance is apparent in the arts of construction. The railways have brought excellent stone from the immediate neighbourhood of the quarries, at so low a rate of carriage, that its cost is often exceeded by brick work, and consequently it is much used for whole fronts of buildings. That bad substitute, stucco, generally unsightly, and often entailing an *annual* expense, is seldom made use of, and we could wish that everywhere, where stone is expensive, people were equally aware of the superior advantages of good brickwork. The stone most used is known as "Yorkshire pier-points;" it is a sandstone of good yellow colour, and according to one architect, is nearly as cheap as the best red facing bricks, and quite as cheap as what are called in Manchester "seconds," and much cheaper than brickwork, according to another. It is used with the natural fracture for the beds, and is rough dressed on the face; it is generally laid in blocks, averaging perhaps, 9 inches by 6 inches on the face. It is generally backed with brickwork, but sometimes with the red sandstone of the neighbourhood (Collyhurst stone), of which the Collegiate church is built, but which is only adapted for parts protected from the weather. Collyhurst stone is, at present, much cheaper than brickwork. For mouldings and for finer work "Summit stone" is still used; it is a very good stone, and is highly crystalline. The use of iron is still greatly extending in Manchester, where the principles of its application are well understood, and all the casting establishments are in active operation. The most novel application of this material is in the Independent chapel, erecting in Salford, near the Broughton-bridge, from the designs of Mr. Richard Lane. The roof is framed of cast-iron principals, curved, and meeting at the top in a Gothic arch. Each half is in two pieces firmly bolted together, and the principals are connected by tie-rods. The feet of the principals are spread out, and rest on blocks of stone, but are further supported by iron columns, built into the wall, which stand upon stone corbels at the ground level. There are shoes, cast on the principals, to receive the purlins. There will be a school-room underneath. There are two heights of iron columns, the upper supporting the iron girders for the galleries. These girders are curved in form, so as to approach nearer to the section of the steps of the galleries. The roof may be made a very effective feature; and that a similar treatment of iron work in Gothic architecture is desirable, has been pointed out in a former number of this journal.* The style adopted in this building appears to be "perpendicular." The windows are in two heights, and the roof spans the whole width of the building. The principal front will have a window with crocketed canopy over the entrance door, and is divided into three compartments by canopied buttresses, surmounted by crocketed pinnacles. The style is not well treated, and the mouldings are exceedingly meagre, and spiritless, but the constructive effort is worthy of some praise.

St. Simon's Church, Springfield-lane, is not far from that just described. It is on the Salford bank of the river, in a very favourable situation for the display of architectural skill. It is also by Mr. Lane, and is certainly an improvement upon the Independent Chapel, though neither much better, nor much worse than the general run of cheap early English churches. It consists of a nave, and aisles, a short chancel, with octagonal east-end, transepts, a south porch, and a western tower. It is built of Yorkshire stone, backed with Collyhurst stone. The tower will support an octagonal spire, rising to the height of 150 feet. The chancel will be groined, and will have three windows to the east. At the ends of the transepts will be windows of three lights, with quatrefoil tracery, and the aisles will have windows of trefoiled tracery, with two lights. There will be cusped windows in the clerestory, and a window of three lights over the western door. The tower is ascended by a turret in the angle formed by the tower, and the north aisle. There will be open benches.—Near the Norman church, built about four years ago, near Broughton Bridge, are some schools in the same style, and though we are not usually inclined to commend its adoption, we must allow, that it has here been rather effectively made use of.—St. James's Church, at Birch, is a very elegant structure in the early English style, and is, in every respect, a striking instance of the present tendency in church building. The estimated cost is 3,500*l.*, but this is exclusive of the spire. It will accommodate 700 persons, 400 of the sittings being free. The design is by Mr. Derick, of Oxford. The plan consists of a nave and aisles, with the tower at the south-west angle, a chancel, a chamber for the organ in the position of a north aisle to the chancel, and a sacristy, north of the chancel. At the west end will be a large double window, surmounted by a quatrefoil, and in the aisles will be double windows. At the east end will be a triplet, and a rose window. The clerestory will have windows and arcades. The proportions of the parts, throughout the whole church, are excellent, especially in the piers and arches. The roof is an open timber one, of very good design. All the arrangements of an old Gothic church will be here reproduced; and there will be sedilia, credence table, and piscina (?) When quite completed, there will be a considerable amount of decoration; and it seems a judicious proceeding to provide for future decoration, by leaving blocks of stone, which may be carved into bosses, and corbels, as opportunity may arise. Subscription lists have been opened for different objects of detail, and these are filling rapidly.—St. John's Church, at Longsight, is in the early English style, and is from the design of Mr. Gregan. The plan consists of nave and aisles, tower at the south-west angle, and chancel with short aisles, and a sacristy, on the north side. The church has no great amount of decoration, but is effective in outline, and highly creditable to the architect, who had many difficulties to contend with, from alterations in his design. The three chancel arches are effective. There is a stair turret to the tower, a south porch, and a north door. There are two lancet windows at the west end, and an eastern triplet. The aisle windows are plain lancets coupled. The roof is of plain open timbers. It seemed, that the capitals of the pier arches would have been more effective, had their mouldings been a little bolder.—A church, now building of terra cotta, at Platt, we must reserve for future description.—The church of the Holy Trinity, in the Stretford New-road, is in the early English style, and is a good composition, with a considerable amount of decoration. It has a square tower, with detached shafts, arranged at the various stages in a very effective manner. It is a cross church, with a western tower, a north porch, and short chancel. There are aisles to the nave. The porch is inclosed with gates of wrought iron, which are in good taste. In this porch there is a benatura, or stoup for holy water. We suppose it is not used, and see no reason why it should be there. The inclosure-wall and gates are excellent. The interior of the church is of lofty proportions. It is fitted up with open seats, and has a row of candelabra, in the form of floriated crosses, down each side of the nave. The font is a copy. The pulpit, which is of stone, stands on a short pillar. At the opening of the church, it stood on the north side of the chancel arch, in the angle, formed by the responds of the chancel, and transeptal arches. It was soon found, that the clergyman could not be heard, and it was therefore brought out to the western face of the transeptal respond, and there is now no difficulty in hearing. This alteration, which was one demanding some constructive and artistic skill, has been very ably managed by Mr. Travis, architect, of Manchester. The architects of the church are Messrs. Scott and Moffatt, of London.

The church at Red Bank is one, which we are sorry we cannot speak of in terms of commendation. It consists of nave, aisles, and chancel, with porches in the usual position of the chancel aisles, the east end being next the street. The aisles are very lofty, with coupled lancets of enormous length. These aisles have lean-to roofs, with sham-gables towards the street. The style intended is Early English, but has some mixture of "perpendicular," and much of a style, not to be associated with any thing previously known in architecture. The porches have each two gables, and in the centre a door with square label head. The buttresses are surmounted by pinnacles of most attenuated form. The enclosure wall and gates might pass for meagre imitations of those of the Holy Trinity Church. The gable crosses, the triangular window, with its volutes, or twists at the angles, the bell-turret at the end of the south aisle, are all points which a certain contemporary, who is less given to encouraging criticism than THE BUILDER, would do well to notice. There does not seem to be any sufficient reason for placing the entrances at the east end. They are designed in what some one called the two and two principle, though, *inside*, one of them is a vestry. Certain chimney-pots are to be seen on the roof. There is an open timbered roof, and some very bad stained glass. The church has pews. The proportions of the interior are very ill arranged. The chancel roof is of steeper pitch than that of the nave.—The Catholic church of St. Wilfrid, Hulme, of which views have been published by Mr. Pugin, the architect, in the two papers in the *Dublin Review*,* is a plain structure of red brick, with very little stone, and is in the Early English style. The chancel has lately been decorated in colour and gold, and has a very splendid appearance.† Approached from the nave, which is extremely plain, it is strikingly effective; and is not less so by night, when we saw it, lit up with numerous candles, than it is by day. The stained-glass windows of course require the effect of daylight. The diapering, in red, blue, and gold, is carried over every part of the surface, amongst which may be discerned, the lily, emblematic of the Virgin; the monograms of the Saviour, and the letter *W*, for Wilfrid. In the heads of the arched compartments of the reredos, are the heads of saints, painted by Mr. Keeling, of Manchester. The decorative printing was executed by Boardman. There is a large proportion of blue in the colouring, yet the effect is by no means cold. The roof, which is of plain rafters, is powdered with stars. All the accessaries of the altar, which would require a long description, have been designed by Mr. Pugin, and evince much thoughtful consideration. There are three sedilia. The piscina is elaborately embellished; it has a deep bowl, and is furnished with a shelf for the cruets.

* Vide "Gothic Ironwork," *ante* p. 397.

* Ecclesiastical Architecture, by A. W. Pugin, reprinted from the *Dublin Review*.

† Some account of these decorations appeared, *ante*, p. 356.

The rood screen is richly embellished with colour and gold, and supports a rood, with images of the Saviour, of the Virgin Mary, and St. John. The chapel of the Virgin is in the north aisle of the chancel, and is also embellished with colour and gold. The eastern triplet, and rose window above it, are of elegant design, and all the east windows are glazed with stained glass. The church itself, exclusive of the decorations, was erected at a cost of 5,000*l.* The font is a very beautiful one, of original design. The tower is not yet completed, it will, probably, not be as represented in the *Review*. The house of the priest immediately adjoins the west end; it contains some good fire-places and grates. A remarkable feature in the exterior of the church, is the weathering out of the base of the wall, to the extent of the projection of the buttresses.

A Presbyterian church, and schools have lately been erected near the workhouse, from the designs of Messrs. Travis and Mangnall. The architects had great difficulties to contend with, which we are bound to say they have surmounted in an able manner; and, notwithstanding the restrictions of site, and the injunction placed upon them, to avoid all impediment in the nature of piers, they have succeeded in producing a highly meritorious work. The style is perpendicular; there is a square tower, and an open timbered roof. The schools are to the east of the church. The whole is built of stone, and will cost 3,400*l.* Much skill is shewn in the arrangements for ventilating the school-room: the air is admitted by three apertures, which take the form of quatrefoils, and thence by perforations through the floors; being carried through other apertures into the space above the ceiling, whence it passes out by the louvre on the ridge of the roof.

A new Catholic chapel is in progress in Chapel-street, Salford. It is in the Decorated style, and is wholly of stone. The architects are Messrs. Weightman and Hadfield, of Sheffield. The plan consists of a nave and aisles, four bays in length, a chancel, a north transept and chapels. It occupies a large space of ground. The windows contain some good tracery.—A new steeple is being built to Christ Church, Salford, which is Italian in style, in accordance with the rest of the church.—The Methodist chapel at Red Bank is remarkable only from its ill-success as an attempt. It is designed by a mason, and is built of red brick and stone, with clumsy and ill-proportioned details. The roof, in part an open timbered one, is very faulty.—Some alterations are making in the seats of the Collegiate Church, under the direction of Mr. Gregan, and it is proposed to devote the western door to its original use as an entrance. There are many other churches in progress in the neighbourhood of Manchester, which we have not here space to notice.—Amongst the schools we may mention, the Roby schools, in a street leading out of Portland-street. The style is Elizabethan, and they were designed by Mr. Walters, who has succeeded in producing a very meritorious work. The building is supported upon iron columns, being built over the play-ground. The lower story has a series of arches of different sizes, filled with iron-work. Above are lofty bow-windows, projecting chimneys and gables; the whole arranged in a very skilful manner. The materials are red brick and stone.

The Queen's Hotel, in Piccadilly, is also by Mr. Walters. It is a large building in the Italian style. The porch is projecting, with a broken pediment. The capitals of the pilasters are original, and in very good taste, and this is equally true of some other ornamental parts.—The station of the Manchester and Birmingham Railway is a very clever design. It is considerably elevated above the street, the carriage ascent being by a long inclined road, and that for foot people by a staircase. The principal building is entirely of stone, Italian in style. The front consists of a projecting centre, with a large segmental-headed gateway, and two wings. Each wing has a door and window on each side, the mouldings, rustics and basement, being well designed. The cornice is peculiar in the stone imitations of tiles, which project to the edge, from about two feet back. There are two heights of windows, the upper ones being square. The basement in the street is of brick, the entrances to the staircase being of stone. Each entrance has an arch rusticated, inclosing a doorway flanked by an order. The stairs are ascending and descending in the same well-hole, quite distinct, so that the two streams never meet, and as this arrangement is not common, we subjoin the dimensions. The well-hole, is 22 feet 9 inches square in the clear, and the height to be ascended 29 feet. The stairs are six feet wide, and each tread is 12 inches. There are 72 steps and landings, each riser being nearly 5 inches high.—Two wings have been added to the Manchester workhouse; they are of good plain brickwork. The offices near this building pleased us much. They are in the Italian style, of red brick, with stone dressings. The cornice, coins, and decorations of the windows are all excellent, if we except those of the upper range of windows, which are rather too meagre. The bell tower would have been improved by an addition to the height. The central doorway and porches manifest much ability, with some novelty. The architect is Mr. Dickson.

The greatest change in the architecture of Manchester is apparent in the warehouses; in many of which there is much architectural display. That of Messrs. Philips and Co., in Church-street, is of brick and stone; the windows having architrave and cornice. The whole is of "fire-proof" construction, though its safety is interfered with by the central well-hole staircase, adopted for the advantages of light, an arrangement lately much in vogue in that class of buildings. The rapidity with which fire was communicated from floor to floor, by this arrangement, in several instances, led the insurance offices to increase the rate for that class of buildings, and they are now seldom adopted.—There are many other warehouses of red brick with stone dressings; one in the Oxford-road, with a stone basement, enriched with pilasters. Some of the warehouses have very good doorways, particularly one in George-street. Mr. Walters is the architect of a warehouse in George-street, which has the entire front of stone, backed with brickwork. The work is rough dressed: it cost 5,500*l.*, which is less than it could then have been built for in brickwork. The design is in the Italian style, plain, but expressive of the use.—Near this warehouse, we noticed another, with a stone front, finished with a pediment. There is also a warehouse, building in Falkner-street, of stone, in which there is some attempt at design, the upper stories having an order of Grecian Doric columns, with a fret in the freize; but we cannot report favourably of the result.—The joint station of the Manchester and Leeds, and Manchester and Liverpool railways, at Hunt's bank, is a wonderful work for any age. The line is carried across the river, and the road, by bridges, each of one arch, of great span; and as works of construction, they are, perhaps, unrivalled. The passengers' shed above is of great length, and has a roof of wrought iron. To form the road for carriages, it was necessary to arch over the river Irk, for some distance. Some new offices are building at this spot, in which fire-proof construction is largely used. The ground had to be excavated from 31 feet to 37 feet down for the foundations, and the difficulty must have been increased by the near approach to the river. Near the station, is the Palatine Hotel, a plain Italian building of stone, but in good taste, in which there is a staircase wholly of iron. It was executed by Bellhouse and Co., and whilst admirably conducive to its object of providing a means of escape from fire, is not inelegant, and may be given as an example of the successful treatment of ironwork. The strengthening ribs beneath each tread are arranged, so as to intersect each other, with good effect, when seen from below. Some gilding might be introduced with a good result.—The directors of the Bank of England are erecting a new branch bank in King-street. It is from the designs of Mr. Cockerell, but is not sufficiently advanced to enable us to speak of its merits. It is expected to cost between 17,000*l.* and 18,000*l.* In private houses, less progress has been made than in larger buildings. Some of the Gothic houses lately built, as for example in Broughton, are the most whimsical designs, we ever saw. We ought, however, to mention, that the Broughton rectory and schools are creditable productions; and a chancel in the decorated style is about to be added to St. John's church by Mr. Gregan.

The Free Trade Hall was lately decorated for the Anti-Corn Law Bazaar, by Grieve, of London. It was styled a Tudor Hall, but had very little in common with that class of apartments, further than the character of the painted decorations. These were done on canvas and then nailed up; the colours were red, blue, and gold. The dimensions of the hall are 136 feet by 105 feet, and on the late occasion of the Athenæum Soirée, it is stated that 3,800 persons were present. Some mention of this meeting was made in a late number.* The Manchester Exhibition, which has now closed, contained some good pictures. Poole's picture, of Solomon Eagle preaching, gained the principal premium. There was also Roberts's Interior of Roslin Chapel, and Stanfield's Castle of Ischia. The architects seem to have quite given up contributing; the only drawings worthy of praise were a design for a Gothic church by T. Worthington, and Pullan's clever design for the Queen's robing-room, lately in the exhibition at the St. James's bazaar. The last has been deservedly rewarded. In saying there were few architectural drawings, we had almost forgotten, some attempts, which are so bad, that the very porter ought to be ashamed of them. Martin had some good drawings, one of them rewarded, and, on the whole, the exhibition, which was of great extent, had several pictures of sufficient merit, to make us regret the presence of some glaring exceptions. The hall has lately been repainted, and a plentiful application of the brush, having been given to the casts of the Elgin marbles, these fine works, which were presented by George the IV., have lost nearly all their beauty.† * *

THE IDENTIFICATION OF ARCHITECTS.

Sir,—That architects should affix their names to their productions as other artists, at least sculptors and engravers do, would seem to be only reasonable and proper, and had such always been the practice, we should now know with certainty, who were the architects of many structures whose authorship is either entirely unknown, or exceedingly doubtful. For instance, it has never been clearly decided if the late Royal Exchange, and Temple Bar, ought to be attributed to Wren or not. In some few cases, indeed, the authorship of a building is of such universal notoriety, that its architect's name cannot possibly be unknown or ever fall into oblivion. One would as soon think of asking "Who wrote Shakspere?" as of inquiring who built St. Paul's, who made the alterations at Windsor Castle, or who is erecting the new palace of Westminster? But there are a great many other buildings, some of them of sufficient public note, the names of whose architects are not known either to the public or to architectural writers. In this latter class is the India House, which has all along (till very lately, when it has for the first time, I believe, been claimed for Holland, the architect of Carlton House), been confidently attributed to Jupp, who was, it seems, only the East-India Company's surveyor, and who certainly is not known to have ever done any thing else.

If it matters not at all whom buildings are by, why is so much importance attached to the ferreting out from old records the names of mediæval architects, which when brought to light are mere names, *nominum umbræ*, and only so many letters of the alphabet?

It is not, indeed, to be recommended that architects should display their names on the fronts of buildings, as conspicuously as those of "Barclay and Perkins" meet our eyes upon many *public* structures, that make no secret of their publicity. But a name and date may be recorded much more modestly, and where it may not be observed until sought for; for which reason they ought to be inscribed uniformly in some one particular situation about the level of the eye, or rather below than above it. Basevi did so in Belgrave-square, where his name may be read on a plinth next one of the porches to the houses; and the same has also been done in one or two instances by other architects.

Budownik.

* Vide p. 526.

† For some remarks on this disease, vide "The Plague of Whitewash," p. 30, *ante*.

LIGHTING AND VENTILATING.

The lighting and ventilation of the Central Criminal Court are much, spoken against. During a trial there on the 1st inst. the Chief Baron complained that he could not see the gentlemen of the jury, and that counsel were exposed to the same inconvenience. Mr. Clarkson hoped to be excused if he suggested to his Lordship that he should use his influence with the city authorities to relieve the bar, and indeed every person sitting in the body of the court, from the intolerable annoyance which arose from the operation of Dr. Reid's system of ventilation. At one moment they were exposed to a volume of hot air which was insupportable, and at another, to currents of cold wind, forced into the court by the workmen engaged outside. He could assure the Court, that it was almost killing his brethren of the bar, two of whom were now suffering in consequence of their attendance in court, and consequent exposure to those varied currents, during the present session. The Chief Baron said, that he had taken a severe cold on Wednesday last from, he presumed, the same cause.

The Jury, at a subsequent period of the day, made an appeal to the Court, to give directions that they might be relieved from the cold draughts of air which were poured upon them. Mr. Ballantine remarked that the nuisance was most serious, in its prevention of the due and proper administration of justice. The jury were more likely to be thinking how they should escape from stiff necks and sore throats, than to be attending to the case submitted to their consideration.

In connection with this subject we have received the following letter:—

Sir,—It was not without considerable surprise that I read in the *St. James's Evening Chronicle* of the 4th inst. an account of the defective state, or rather the complete failure, of the system of ventilation adopted at the Central Criminal Court. It appears the court and jurymen were seriously affected with colds and sore throats, by the hot and cold air alternately admitted. If this is the professed system of ventilation adopted in large buildings in the great metropolis, it is apparent, notwithstanding the various advertisements for perfect ventilation, that there is a very great deficiency of knowledge on the subject. The scientific gentlemen do not appear to have hit upon a simple system, by which churches, chapels, courts of justice, or any large room, can be ventilated, without subjecting those in the buildings to inconvenience. Yet it is possible to be done, by a far more simple and cheap method than by blowing in volumes of hot air or by blasts of cold: it really is laughable to read of such a system. It reminds me of an eminent medical gentleman being called in to give his advice on the best method of ventilating a large public building, containing then about 300 persons, many of whom were afflicted with fevers and smallpox; moreover, several had died. The learned gentleman, though an excellent M.D., was entirely unacquainted with ventilation: he proposed a system which would have hazarded the health, if not the life, of every person in the building subjected to his system. It was objected to, and the opinion of an obscure country individual was asked: his plan was approved of; the building was ventilated under his direction, and though six years have elapsed, not a single case of either fever or smallpox has occurred as yet, though the means were as simple as possible. No volumes of hot air, nor blasts of cold, are admitted.

It appears, by the weekly advertisements in The Builder, that various remedies are proposed, but they are not considered by any means perfect, by persons who have had some little experience in ventilation.

It is the same with smoky chimneys. Advertisement follows advertisement; but it really is astonishing that, among so many scientific men in London, there should be so few who understand the method. What induces me to make this remark is, having noticed, in most parts of London, the tops of chimneys, and, consequently, the houses, disfigured by various sorts of chimney-pots, cowls, &c., more particularly at the West-end. The noble buildings—I may call some of them palaces—in Pimlico, are, I think, more disfigured than any other part. I could not help saying, when looking at them, what a pity such beautiful structures should be so disfigured. It is matter of surprise that both ventilation and the cure of smoky chimneys should not be made the subject of study, by practical experienced workmen, more than they are; the difficulty surely might be surmounted in a great majority of cases, unless, which is too often the case, the fault is in the construction of the flues. There are many causes of chimneys smoking; the means made use of to cure one would make another worse; the first object should be to find out the cause; practical experience will point out the remedy. I have known large buildings in the country, erected in the Elizabethan style, in which nearly every chimney smoked; many of the flues, which ought to have been 14 inches by 14, or 14 by 9, were not more than 7 by 7, in parts of the flues. The architects, or their clerks, forget, that the larger the fire the larger the flue is required. The practical workman, when engaged in building, knows what will be the effect, but he is compelled to work according to the plan, right or wrong. If he points out the error, he being only a workman, it is thought nothing of. This brings to my mind a complaint in The Builder, a short time since, of the want of scientific practical workmen. There is nothing surprising in this, because few, if any, meet with the encouragement they deserve; if they see any thing going on wrong, and mention it, very likely they experience a rebuff; they are thought to be nothing more than labourers, to be discharged when no longer required. This knowledge deters and keeps many a scientific man from exercising his talents to advantage. The drawing clerk in the office is generally thought more of than the best of workmen. I might have added much more on this subject; let this suffice at present; at some future period I may resume the subject, if you think this worth a place in the columns of The Builder.—I am, Mr. Editor, yours, &c.

A Working Bricklayer.

Sudbury, Nov. 10, 1845.

NEW CHURCHES AND BUILDINGS IN THE NEIGHBOURHOOD OF BRISTOL.

The number of new churches lately consecrated, especially in the western part of the country, is very striking. In Wiltshire there have been half a dozen within a few months.

St. Saviour's Church at Coalpit Heath, near Bristol, was consecrated on the 9th ult. It is situated about seven miles from that city and is spoken of in the neighbourhood as a good specimen of modern skill. *Felix Farley's Bristol Journal* contains a description of the building from which we extract the following:—"The principal parts of this church are a nave and chancel with open roof; north and south aisles; vestry situated at the east end of the north aisle; and south porch. The south porch is the only entrance for the congregation; there is a private entrance for the clergyman on the south side of the chancel, and an entrance to the vestry from the churchyard.

The nave is lofty, 60 feet long, and 20 feet wide; the chancel, 28 feet by 17 feet; the aisles 11 feet wide. The nave and aisles are filled with substantial open oak seats, with carved heads. On each side the nave are four pier arches, but no clerestory windows. The west window has three lights; in the windows of the nave are two lights, with quatrefoil heads. The chancel is entered by one step, and distinguished from the nave by a perforated wood screen, of a light and elegant design. The floor of the chancel is laid with encaustic tiles, arranged in devices. On the south side of the chancel are a piscina and sedilia, and a credence table on the north; there is an east window to the chancel with three lights and three trefoils in head, filled with stained glass. The lower part of this and the other three windows of the chancel, are also filled with stained glass. The altar is approached by three steps.

The pulpit is of stone, panelled, with chamfered base and corbel, and entered by a flight of steps from the vestry. The lectern and reading-desk are of oak. The font is octagonal, with trefoil cusped panel, and surmounted by a handsome oak canopied cover. It stands against the pier to the left of the south entrance.

In the vestry we observed a massive oak chest studded with wrought-iron work. The hinges and furniture on all the doors are also of wrought iron.

Upon entering the church, it presents a more than usually ecclesiastical appearance. The open and substantial oak seats with carved heads, the light piers and arches, and above them the framed timbers of the roof, the quatrefoil headed windows of the aisles, the oak lectern and font, with its canopy, the stone pulpit, and lastly, the capacious chancel emblazoned with the rich and solemn light proceeding from its stained-glass windows, produce a good effect.

As to the exterior, the high pitched roofs of the nave and chancel, the tower pierced with its belfry windows, and terminated by a foliated wrought-iron cross, the oak doors, the decorated stone crosses on the nave, chancel, and porch gables, the geometrical headed windows and massive buttresses, and the free-stone quoins and dressings, contrasting with the various grey tints of the native stone, render the appearance of the exterior remarkably picturesque.

About 100 yards on the north-west side of the church, stands the rectory-house, of similar date to the church.

The churchyard is surrounded by a neat, low wall, flanked with shallow buttresses, and is entered through a lich gate, of massive character, with stone covering."

In this description we cannot avoid remarking on the introduction of a *piscina*, as being unnecessary in a Protestant place of worship and quite out of place.

The lich-gate, some of our readers may need to be informed, is a covered gate into a churchyard to rest the corpse under, and shelter the mourners. Its literal meaning is *corpse gate*.

Fyfton church, three miles from Bristol, was opened publicly on Tuesday se'nnight. It has been entirely re-built on an old foundation with the exception of the tower at the west end. An aisle and porch have been added on the south sides of the nave, and a robing-room on the north side of the chancel. The style is early decorated. The materials used are rag, and bath stone dressings. The structure is very small, the chancel quite a miniature, but nevertheless contains *stalls*, a credence table (with the outward semblance of a piscina) in the north wall of the chancel, and is paved with encaustic tiles. The roof, both of nave, chancel, and aisle, is open, the seats (without doors) are of deal, varnished. The pulpit is of stone, and is attached to the north wall of the nave in the angle formed by the pier of the chancel arch; the reading pew is in the opposite angle. The lower story of the tower is open to the church. The tower externally is a low square structure, with a slated pyramidal roof. The parapet of the tower projects before the face of the walls and is carried on rudely sculptured heads.

Mr. Hicks was the architect; Brown and Phillips, both of Bristol, executed respectively the mason's and carpenter's work.

The hinges, locks, latches, and other iron-work, have received attention. Throughout the country very great improvement is to be observed, both in church-architecture and church-building. Minute points are attended to, and a good feeling is observable even where great excellence has not been attained.

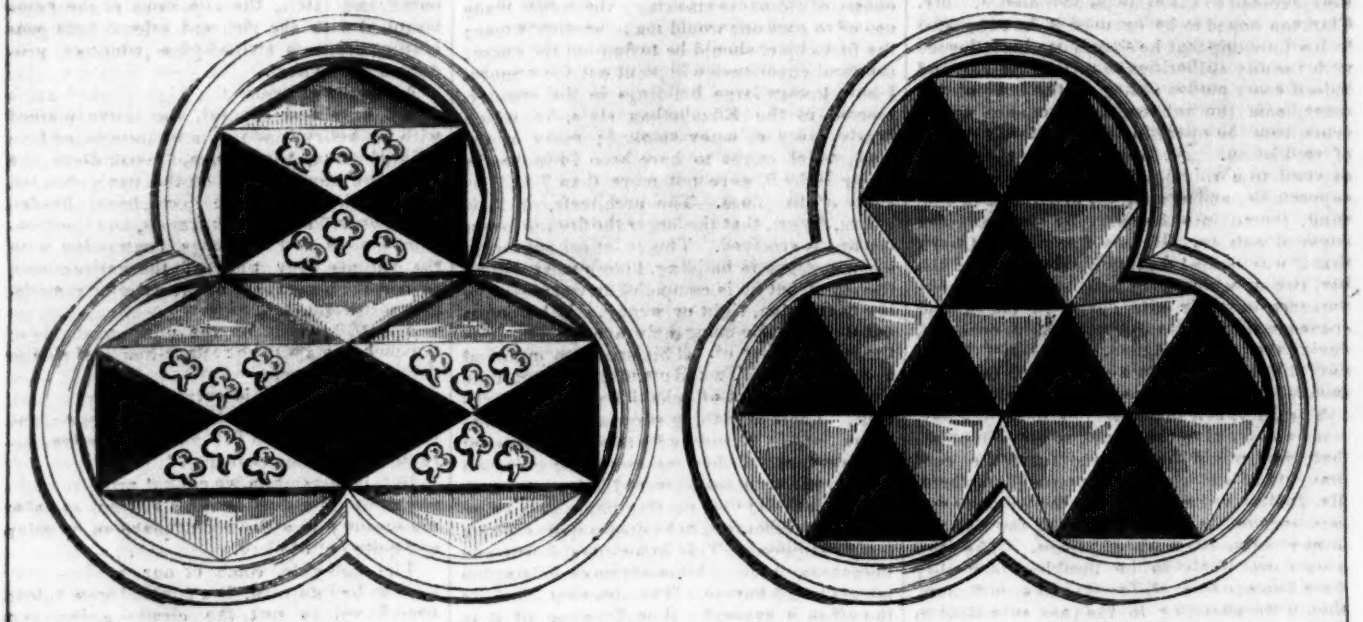
Some extensive barracks are in the course of construction in the Gloucester-road, between the church last named, and Bristol. Numerous villa residences are also springing up around the city, to which a respectable appearance is given by the use of stone-facings, there cheaply attainable.

The foundations are being laid, adjoining the new Guildhall in Bristol, for a branch bank, from designs by Mr. Cockerell. Willcox and Son are the builders.

Norton Hall.—The Earl of Ripon's family mansion in Lincolnshire, which was destroyed by fire in 1834, has been rebuilt, and is now nearly completed. The first stone was laid by Viscount Goderich on the 25th of October 1841, with some ceremony. Mr. Shearburn, of Dorking, is the architect.

Novel Project for London Streets.—A project is said to be contemplated that would strikingly alter the aspect of London; it is to cover the footways with transparent verandahs, projecting from the houses, so that even on the wettest day the metropolis could be traversed from one end to another without an umbrella.

WINDOWS FROM RUSHTON LODGE.



WINDOWS FROM RUSHTON LODGE, NORTHAMPTONSHIRE.

In the last number of The Builder* we gave illustrations of the very curious triangular lodge at Rushton, in Northamptonshire, built by Sir Thomas Tresham, and noticed as one of the hiding places where the gun-powder plot was concocted. The annexed engravings represent two of the windows, and are further illustrations of the punning reference made to the owner's name, throughout the structure, previously pointed out: the openings themselves are trefoils; the divisions are all triangular, and the three-leaved shamrock, in threes, appears as a decoration. Any correspondent who may be able to send us an account of the interior of this building, would oblige us by doing so.

FREEMASONS OF THE CHURCH.

Nov. 11.—The Rev. G. Pocock, L.L.B., in the chair. The minutes of the last meeting were read and confirmed. The completion of the seal was announced, and the probability of conferring the diplomas by the next meeting.

Mr. Wm. Harry Rogers then read a paper on the subject of "Illuminated Books in their connection with Architecture," illustrated with a series of diagrams, about thirty in number, enlarged from MSS. preserved in various public and private libraries. The first point insisted upon was the fact, that the miniatures of illuminated MSS. of the middle ages, contain a peculiar style of architecture which has never been carried into effect, but that in these examples, the successive changes by which the architectural character of each century is distinguished, are clearly traceable. They are, however, varied, from causes which in many cases are to be ascertained. The Anglo-Saxons, for example, in their edifices always gave the columns, of which they made a most frequent use, a short and stunted form, consistent with their ideas of immense durability, but it was by no means the case in the architectural details which they introduced into the miniatures of their books. In these we find them in almost every case of an extraordinary length; indeed, an enlarged drawing from a MS. of the tenth century was produced, in which the shaft of a column, formed of two parallel lines, was found to be eighteen diameters. From the celebrated "Durham book" the capital of a column was enlarged; in this example, as in others from the same and similar volumes, the dog was a very prominent characteristic, a circumstance which was endeavoured to be accounted for by the fact, that this animal was venerated by the Ancient Phœnicians, "and we may," remarked Mr. Rogers, "by no tortured hypothesis assume, that what was originally represented from motives of devotion, habit contrived to perpetuate." The dog was afterwards the customary grotesque in Anglo-Saxon, and eventually in Lombardic manuscripts. From a remarkably early volume of the Greek Gospels, the chair of St. Matthew and a tower at the back of St. Luke were given, and interesting specimens they were of architecture of a period with regard to which so little is generally known. In MS. architecture of the beginning of the twelfth century, the columns are represented very short, much enriched, and having bases generally of a disproportionate size, but towards the end of this century we again find that yearning after attenuated forms and long columns, which formed so remarkable a feature in the architecture of the early English style, which was soon so totally to supersede it. An example of this, from Mr. Holford's collection, was referred to as described by Noel Humphreys, and a curious diagram from a MS. in the British Museum, exhibited a column of considerable length, and a lectern, in the formation of which lightness seemed to have been procured at the sacrifice of strength. A lectern of the early English period was enlarged from "the Chronicles of Johan de Walingford," in the Arundel Library, and the next volume glanced at was a superb book executed in England in about the reign of Edward I., and kindly contributed by Mr. Sedgwick, from the College of Physicians. The example enlarged from this MS. was an illustration of the 79th psalm, in which men, with various instruments, were represented in the act of demolishing a temple. Some examples were next given of MS. architecture of the "*Decorated*" period, and to elicit the style of the fifteenth century, drawings were prepared from "The Life of Richard, Earl of Warwick," in the British Museum. Mr. Rogers next referred to the discovery of the baths of Adrian in Rome, as an important crisis in the history of book illustration. The Italian style was exemplified by some beautiful MSS. contributed by Mr. Jarman. The last specimen given was from an edition of Eusebius, of the sixteenth century, beautifully illuminated and preserved in the Harleian Library.

The next lecture was announced for December 9, "On Architectural Acoustics," by Mr. Richard Cull.

BURFORD CHURCH, SALOP, DIOCESE OF HEREFORD.

This church contains a nave, chancel, and tower at the west end; the chancel has been recently restored by the present rector, the Rev. J. W. Joyce, the ceiling taken down, and roof thrown open. The stained-glass window which was put in a few years ago, in what was called the modern style, viz. with a circular head, has been taken out; in doing which the arch of the original window was brought to light; the tracery had been taken out. This is now restored. In taking down the old parsonage-house, the tracery of *the window* was found in part of the foundation. The altar steps are relaid, and encaustic tiles, with proper devices, laid to the floor, the sedilia and piscina restored, and a new arch formed between chancel to nave. In this chancel are buried some noble and ancient families, the barons of Burford, owners of the manors, and, amongst others, the daughter of John of Gaunt. The tomb stands in a gothic arched recess in the north wall, on which reclines a sculptured stone figure of the above lady, supported by angels at the head, and a dog at the foot; over the figure is the following inscription:—

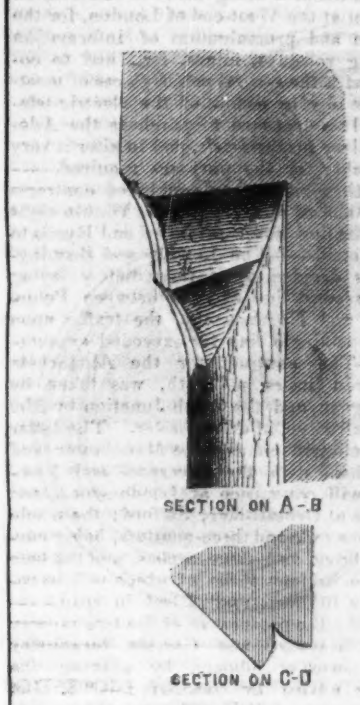
"Here lieth the body of the most noble, Elizabeth, daughter of John of Gaunt, Duke of Lancaster, own sister to King Henry the fourth, wife of John Holland, Earl of Huntingdon and Duke of Exeter, after married to Sir John Cornwall, Knight of the Garter and Lord Fanhope. She died the fourth year of Henry the sixth, Anno Domini MCCCCXVI."

A new organ has recently been given to the church by the Hon. Misses Rushout, whose brother, Captain Rushout, nephew of Lord Northwick, is patron of the living. The same ladies have presented a new carpet and altar cloth, with appropriate figures, worked with their own hands. In the churchyard stands the remains of the stone cross, upon three steps: the top and arms are broken off. Adjoining the churchyard stood three parsonage-houses, which were formerly occupied by the incumbents of the different portions of the parish. Only one of the houses now remains, and this has recently been rebuilt. S.

New Theatre at Lisbon.—The new theatre of "Donna Maria Segunda" which was commenced in the spring of 1843, was opened to the public on the 29th ult. It is of the Ionic order, and adorned with a portico of six columns crowned by a pediment. Its extent may be inferred from the fact that its front contains two rows of seventeen windows each. The architect is Senor Lodi, brother-in-law of the Count de Farrobo. Its cost is said to be 50,000*l*.

* See page 538, *ante*.

STOPS TO CHAMFERS IN GOTHIC ARCHITECTURE.



Figs. 6 and 7.

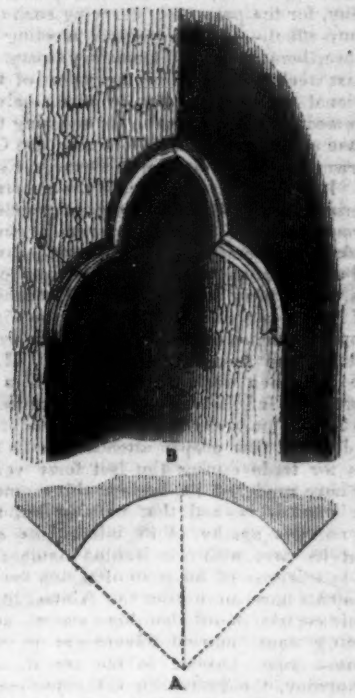


Fig. 5.

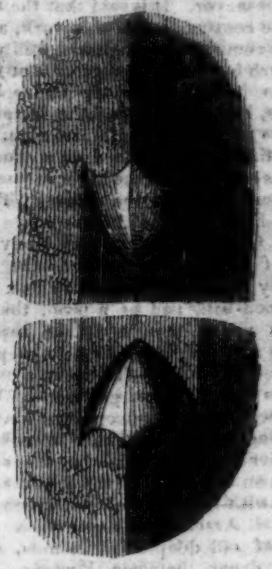


Fig. 4.

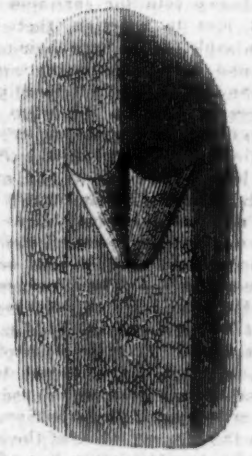


Fig. 1.

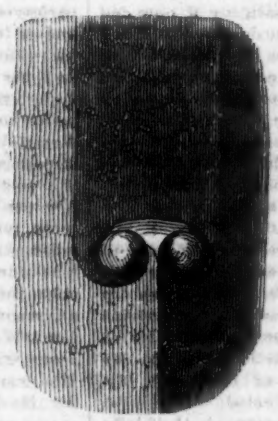


Fig. 2.

Fig. 3.

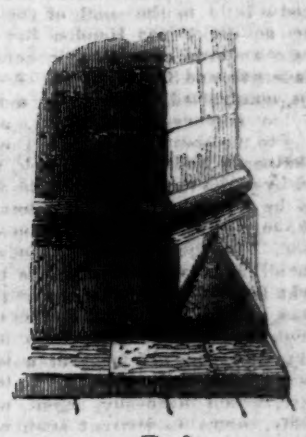


Fig. 8.

STOPS TO CHAMFERS IN GOTHIC ARCHITECTURE.

In all the architectural works of the middle ages, the greatest ingenuity is everywhere apparent, producing pleasing effects even when attending wholly to convenience and usefulness. It is shewn even where the angle of a wall or pier has been cut away in part, to give room; the junction of the angular line where left, with the plain face formed by cutting it away below (or chamfer as it is termed), being cleverly made into an ornament. Figures 1, 2, 3, and 4 (sketched by Mr. Wylson), shew Norman stops to chamfers, in Sherburn church, Yorkshire. Figure 5, represents a termination to a hollowed angle in Elgin Cathedral, Morayshire. Figures 6 and 7 shew the section on line A B, and line C D. This last mode of termination is often found in buildings of the thirteenth and fourteenth centuries.

Figure 8, represents the base to pier of central tower, Kirk-Fenton Church, Yorkshire; a church which has lately been restored by Mr. G. F. Jones, of York.

WORKS IN THE PROVINCES.

The foundation-stone of an extensive Gaol was laid last week at Winson Green, a distance of about two miles and a half from Birmingham. The ceremony was performed by Thomas Phillips, Esq.; Mr. Hill is the architect, and Mr. Walthen the builder.——The corner stone of a New Church at Alnwie, to be built and endowed at the sole expense of the Duke of Northumberland, was laid last week by His Grace in person. A glass plate, bearing the following inscription, was deposited underneath the stone, in a cavity prepared for its reception: — "Saint Paul's Church, erected by Hugh, third Duke of Northumberland, A.D. 1845." The plan is arranged as a nave and chancel, with aisles capable of containing 1,000 persons, in open seats, without galleries. The principal entrances are by a door in the tower at the west end, and a porch on the north side. The style selected is the decorated, of the time of Edward III., with the high pitched open roof, the clerestory, and varied windows of that period. Mr. Salvin is the architect, and Mr. Novell the contractor.——The church of St. James the Apostle, at Greensted, Essex, was consecrated last week by the Bishop of London. The *Essex Herald*, in giving an account of the ceremony, says, — The design is Gothic, in the early English style. It consists of a nave with two rows of open benches, carved, terminating in the west by a recess, formed by the tower, wherein seats for children. The chancel is ornamented with two stained-glass windows on one side, and one on the other, also one in the east end. This window forms the most striking object to the eye on entering the church; in the centre is a representation of our blessed Redeemer upon the cross, and the remainder is taken up with scrolls, containing biblical inscriptions. There are also like inscriptions in ornamental scrolls upon the walls of the church, in various parts. The roof is highly ornamented; the pulpit and font are of stone, elaborately carved. The pavement is tesselated. Messrs. Scott and Moffat were the architects, and Mr. Johnstone the builder.——The long-agitated question as to the locality for a general railway terminus at Perth has lately been settled and finally decided by the award of the Lords of the Privy Council on Trade. The situation chosen is a part of the western portion of the South Inch, immediately in front of Marshall's-place, which is to be used for the accommodation of *passenger traffic solely*, and another site provided beyond the limits of the western portion of the

South Inch for the engine, carriage, and waggon buildings of the companies, as well as for their merchandise establishments.——A new Moravian chapel has lately been erected at Bath. A local paper says, it is a "specimen of architectural taste, highly creditable to Mr. Wilson, by whom it was designed. Mr. Aust, the builder, has astonished all observers by the rapid advancement of this substantial structure. It was commenced about the end of March, and is now complete for the use of the congregation."——The first stone of a new quay, at Wisbeach, was laid yesterday week, by Dr. Whitsed, the mayor. It is said that the authorities, in the construction of this work, are determined to combine ornament with utility.——A new church has lately been erected at Leeds, and said to be of very costly and splendid architecture, bearing many of the features of the churches prior to the Reformation. Report states that it is designed as a model of the churches approved by the highest puseyites.——The restoration of the Norman Tower, Bury St. Edmunds, is proceeding. The Cambridge Camden Society has lately voted the sum of ten pounds towards the work, "which they trust will be received as a token of their good-will, and as a proof that, did their funds allow, they would be happy to appropriate a much larger sum to so praiseworthy a restoration."——There is a rumour prevalent in the town and garrison of Woolwich, that her Majesty's government have it in contemplation to cause an extensive and commodious pier to be erected by the side of Globe-lane, on the bank of the Thames, in a direct line with Beresford-street, which leads to the Royal Arsenal, to accomplish which a number of old dilapidated houses, nearly fallen into decay, between Beresford-street and the water side, will have to be razed to the ground, which can easily be done, as the leases are nearly expired.——A lithographed plan of a projected dock at Sunderland has been issued. It appears that the dock will be situated a little to the south of the harbour, having an outlet into Hendon Bay; it will embrace an area of twenty-six acres, 3,160 feet in length, and 350 in width. A sea wall will be constructed, commencing a little beyond the commissioners' works, and, proceeding to the south-east of the Dove Rock, will be partly built upon the rock, and protected by jetties thrown out into the sea. Between the jetties an additional natural barrier will be formed by the accumulation of banks of sand. In the dock 350 vessels will be able at all times to lie afloat. The project is brought forward under the auspices of Mr. Hudson, and excites great interest in the north of England.——Many plans have been proposed to supply the deficiency of water felt in Glasgow. We have this week to record another, which in novelty, extent, and practicability, seems to warrant attention. The scheme is to bring water by gravitation from Loch Katrine, by an aqueduct, to one or more distributing reservoirs adjacent to the city. The plan of taking the water from so large a natural fountain reservoir as Loch Katrine does away with the necessity for artificial fountain dams, at once very expensive and involving considerable risk. The water of Loch Katrine is very soft, and of perfect purity, even in seasons of drought, being collected from a district of steep bare hills, of the primitive formations. The level of the lake is so high above the level of the Clyde, at Glasgow, that the water may be conducted from it to the highest ground in the neighbourhood of the city.——At Killerton House, near Exeter, the seat of Sir Thomas D. Acland, Bart., a new range of hot-houses is in course of erection by Mr. Clarke, the hot-house Builder of Exeter, who has introduced all the modern improvements in construction, as well as in ventilating and heating. The *Western Luminary*, in giving a description of the house and grounds, draws attention to a novelty which may prove worthy the notice of those engaged in similar constructions. Where vines are planted outside the house, instead of cutting the sill or bottom rail of the front sashes, to admit the vines, a false sill is introduced on the top of the main sill, and fastened to the uprights by means of a bolt at each side. This answers the purpose admirably, and without weakening any part of the building.——Notice has been inserted in the *London Gazette* to the effect, that application is intended to be made to parliament in the ensuing session for an act to authorise the erection of an Exchange, News Room and other public buildings, together with approaches thereto, in the parishes of the Holy Trinity and St. Mary, or one of them, in the town of Kingston-upon-Hull, and to incorporate a company, for the purpose of carrying such objects into effect.——At a general meeting of the subscribers to the Hull Cemetery Company held last week, after hearing the report of the provisional committee read, it was resolved that immediate steps be taken for securing the purchase of the very suitable site near the Old Waterworks, offered by Henry Broadly, Esq., M.P. It was stated that in case the cemetery was formed on Mr. Broadley's ground, application would be made for the Government grant for making a promenade on the spring bank, as had already been proposed.——After a long and careful inquiry into the state and capabilities of Hull as a port, lately made by the Tidal Harbour Commissioners, Captain Washington, R.N., and Aaron Chapman, Esq., M.P. Those gentlemen declared the capabilities of the port to be infinitely superior to Liverpool, and to be absolutely *unparalleled* in the country. They declared that proper attention to its facilities for trade during the last forty years would have rendered its trade at this moment double what it is, and that nothing but the most reckless apathy of its inhabitants can prevent its rise, within a limited number of years, to a degree of business of which few of its residents have more than the faintest idea. To their certain knowledge there was no port possessing equal natural advantages in the kingdom—none superior in the world.——On Thursday, the 30th ultimo, the first stone of a new church was laid by Lady Adeliza Manners, at Woolsthorpe, Lincolnshire, the birth place of Newton. The estimated cost is 2,500*l.*, of which 2,000*l.* has been raised.——It is understood that the Ecclesiastical Commissioners intend pulling down the old deanery at Lincoln, and building a new one for the residence of the new dean.——Among the projects in the north, we observe one for a tunnel to connect the opposite shores of the Clyde, beneath its bed—the spot chosen being a little above Govan, at or near the lands of Heatherby Hall.——The new church at Woodford lately erected under the superintendence of Messrs. Wyatt and Brandon, was consecrated last week by Bishop of Salisbury. The old church with the exception of the tower, which is comparatively of recent date, was entirely removed.——The town of Galway has been fixed on, as the capital of the western province, for the site of one of the new Irish colleges.——A colossal statue is about to be erected to the memory of Sir James Shaw, late Chamberlain of the city of London. Mr. Fillans is the sculptor selected. It will be placed conspicuously in Kilmarnock, the birthplace of Sir James.——Llanelly church, which has lately undergone a thorough repair and been considerably enlarged, was re-opened last week by the Bishop of St. Davids.

Bust of Robert Lord Clive, K.B.—We understand that a splendid bust of the great Lord Clive has arrived at Powis Castle. It has been executed in Carrara marble, of the purest quality, by desire of his grandson, the present Earl of Powis, K.G. It may be mentioned, that although several portraits of his lordship were painted, this is the first and only bust in existence being modelled from a full-length portrait at Walcot, and does infinite credit to the correct taste and skill of the sculptor, John Evan Thomas, F.S.A., of London, whose chisel has imparted to this fine intellectual head, a life-like appearance, beaming with that benevolence and generous feeling which characterised his lordship's life; while the features are strikingly formed to command, and marked with determination to carry out its resolves. His lordship represented the town of Shrewsbury in parliament for nearly fourteen years; he was elected mayor in 1762, and filled the honourable office of recorder from 1771 to his decease, November 22nd, 1774.—*Shropshire Journal.*

Accident at St John's Church, Woolwich.—An account has reached us, of the fall of part of this edifice. As we are ignorant of the real cause, and have not yet inspected the building personally, we postpone comment.

RAILWAY JOTTINGS.

The station at the Eastern Counties is to be enlarged by taking down the houses between the station and Spitalfields church, clearing away the whole south side of Union-street.——An attempt is being made to establish an institution at the West-end of London, for the collection and promulgation of information respecting railways, mines, &c., and to co-operate with the several public places of meeting in the city by means of the electric telegraph. It is proposed to purchase the Adelaide Gallery for the *locale*, and to alter it very considerably for the purposes required.——The South Eastern has concluded contracts for the Ashford and Hastings. Within eight months the line between Ashford and Rye is to be completed.——The London and Birmingham has decided upon immediately laying down a second line of rails between Peterborough and Northampton, the traffic upon the present single line far exceeded expectation.——The contract for the Altrincham line, seven miles in length, was taken by Mr. Brogden, and the South Junction by Mr. David Bellhouse, of Manchester. The latter line, which will connect the Manchester and Birmingham with the Liverpool and Manchester will commence at London-road, and terminate at Ordsall-lane, Salford; the whole length, one mile and three-quarters, being carried on brick and stone arches, and thirteen large iron bridges, three of which will be respectively 105 feet, and 71 feet in span.——Mr. Nash, the prosecutor of the two railway robbers, Maynard and Garratt, terminates his praseworthy labours, by offering the following advice to travellers:—"1. Let the passengers watch and see their luggage put into the luggage van or train, and not be content with seeing it on the platform. 2. As far as practicable, take small luggage and packages into the carriages with themselves. 3. Not to mention that their packages are valuable. 4. To have their names and addresses, and particularly the place going to, pasted on the outside (and not merely tied on) their luggage. 5. To advertise and make known to the chief superintendents and police authorities (to have put in the *Police Gazette*) their losses, and contents and marks of property lost. Bearing in mind that it is on the platforms most of the abstractions take place, mistakes and exchanges are effected, and more will happen, until a quick and secure arrangement be made."——The purchases of land for the Berks and Hants, which is to unite the Great Western and South-Western, are nearly completed. The directors of the Great Western, also, have let the works between Hungerford and Basingstoke to contractors. The workmen are engaged shaft-sinking.——Mr. Hudson, as the representative of the Newcastle and Darlington Company, has offered to take the Durham and Sunderland Railway, with all its liabilities, amounting to 300,000*l.*, paying the shareholders 31*l.* 10s. per share; and his offer has been accepted.——Mr. Robert Stephenson has left England for Italy and Spain, to superintend operations on various railways in those countries. He is not expected to return until the close of the year.——With the view to prevent or lessen the evils of accidents resulting from collision, it has been suggested that every passenger train should be accompanied in the rear by a carriage constructed entirely of powerful springs and some such material as India-rubber, of elasticity enough to act and recoil effectually under a violent collision, performing in those extraordinary circumstances the purpose that the buffers serve in ordinary.

St. Alban's Architectural Society.—The object of this society is to aid in promoting a more general acquaintance with those memorials of past ages which tend to illustrate the history and principles of architecture in England. With this view, its attention will be principally directed to the Abbey Church of St. Alban's and the several churches within the country; not, however, excluding other examples of the earlier or middle ages. The society is at present but in its infancy, yet it already numbers amongst its patrons and members, the Marquis of Nothampton, president of the Royal Society, the Bishop of Oxford, the Archdeacon Burney, the rector of St. Alban's, and a considerable list both of clergy and laity.

TABLE

For facilitating the computation of the strength and dimensions of Cast Iron Beams, such as are usually employed in Buildings for all depths of the transverse section, and for every sixteenth of an inch, from Zero to 5 feet, embracing the utmost range of depth that has hitherto been employed.

ARGUMENT.—Inches and sixteenths in the depth of the section.

In.	1/16	2/16	3/16	4/16	5/16	6/16	7/16	8/16	9/16	10/16	11/16	12/16	13/16	14/16	15/16
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
0	0·0004	0·0015	0·0035	0·0134	0·0238	0·0371	0·0534	0·0727	0·0950	0·1202	0·1484	0·1796	0·2139	0·2509	0·2905	0·3340
1	0·3800	0·4290	0·4809	0·5359	0·5938	0·6546	0·7184	0·7852	0·8550	0·9277	1·0034	1·0821	1·1638	1·2484	1·3359	1·4265
2	1·5200	1·6165	1·7159	1·8184	1·9238	2·0321	2·1434	2·2577	2·3750	2·4952	2·6184	2·7446	2·8738	3·0059	3·1409	3·2790
3	3·4200	3·5640	3·7109	3·8609	4·0138	4·1696	4·3284	4·4902	4·6550	4·8227	4·9934	5·1671	5·3438	5·5234	5·7059	5·8915
4	6·0800	6·2715	6·4659	6·6634	6·8638	7·0671	7·2734	7·4827	7·6950	7·9102	8·1284	8·3496	8·5738	8·8009	9·0309	9·2640
5	9·5000	9·7390	9·9809	10·2259	10·4738	10·7246	10·9784	11·2352	11·4950	11·7577	12·0234	12·2921	12·5638	12·8384	13·1159	13·3965
6	13·6800	13·9665	14·2559	14·5484	14·8438	15·1421	15·4434	15·7477	16·0550	16·3652	16·6784	16·9946	17·3138	17·6359	17·9609	18·2890
7	18·6200	18·9540	19·2909	19·6309	19·9738	20·3196	20·6684	21·0202	21·3750	21·7327	22·0934	22·4571	22·8238	23·1934	23·5659	23·9415
8	24·3200	24·7015	25·0859	25·4734	25·8638	26·2571	26·6534	27·0527	27·4550	27·8602	28·2684	28·6796	29·0938	29·5109	29·9309	30·3540
9	30·7800	31·2090	31·6409	32·0759	32·5138	32·9546	33·3984	33·8452	34·2950	34·7477	35·2034	35·6621	36·1238	36·5884	37·0559	37·5265
10	38·0000	38·4765	38·9559	39·4384	39·9238	40·4121	40·9034	41·3977	41·8950	42·3952	42·8984	43·4046	43·9138	44·4259	44·9409	45·4590
11	45·9800	46·5040	47·0309	47·5609	48·0938	48·6296	49·1684	49·7102	50·2550	50·8027	51·3534	51·9071	52·4638	53·0234	53·5859	54·1515
12	54·7200	55·2915	55·8659	56·4434	57·0238	57·6071	58·1934	58·7827	59·3750	59·9702	60·5684	61·1696	61·7738	62·3809	62·9909	63·6040
13	64·2200	64·8390	65·4609	66·0859	66·7138	67·3446	67·9784	68·6152	69·2550	69·8977	70·5434	71·1921	71·8438	72·4984	73·1559	73·8165
14	74·4800	75·1465	75·8159	76·4884	77·1638	77·8421	78·5234	79·2077	79·8950	80·5852	81·2784	81·9746	82·6738	83·3759	84·0809	84·7890
15	85·5000	86·2140	86·9309	87·6509	88·3738	89·0996	89·8284	90·5602	91·2950	92·0327	92·7734	93·5171	94·2638	95·0134	95·7659	96·5215
16	97·2800	98·0415	98·8059	99·5734	100·3438	101·1171	101·8934	102·6727	103·4550	104·2402	105·0284	105·8196	106·6138	107·4109	108·2109	109·0140
17	109·8200	110·6290	111·4409	112·2559	113·0738	113·8946	114·7184	115·5452	116·3750	117·2077	118·0434	118·8821	119·7238	120·5684	121·4159	122·2665
18	123·1200	123·9765	124·8359	125·6984	126·5638	127·4321	128·3034	129·1777	130·0550	130·9352	131·8184	132·7046	133·5938	134·4859	135·3809	136·2790
19	137·1800	138·0840	138·9909	139·9009	140·8138	141·7296	142·6484	143·5702	144·4950	145·4227	146·3534	147·2871	148·2238	149·1634	150·1059	151·0515
20	152·0000	152·9515	153·9059	154·8634	155·8238	156·7871	157·7534	158·7227	159·6950	160·6702	161·6484	162·6296	163·6138	164·6009	165·5909	166·5840
21	167·5800	168·5790	169·5809	170·5859	171·5938	172·6046	173·6184	174·6352	175·6550	176·6777	177·7034	178·7321	179·7638	180·7984	181·8359	182·8765
22	183·9200	184·9665	186·0159	187·0684	188·1238	189·1821	190·2434	191·3077	192·3750	193·4452	194·5184	195·5946	196·6738	197·7559	198·8409	199·9290
23	201·0200	202·1140	203·2109	204·3109	205·4138	206·5196	207·6284	208·7402	209·8550	210·9727	212·0934	213·2171	214·3438	215·4734	216·6059	217·7415
24	218·8800	220·0215	221·1659	222·3134	223·4638	224·6171	225·7734	226·9327	228·0950	229·2602	230·4284	231·5996	232·7738	233·9509	235·1309	236·3140
25	237·5000	238·6890	239·8809	241·0759	242·2738	243·4746	244·6784	245·8852	247·0950	248·3077	249·5234	250·7421	251·9638	253·1884	254·4159	255·6465
26	256·8800	258·1165	259·3559	260·5984	261·8438	263·0921	264·3434	265·5977	266·8550	268·1152	269·3784	270·6446	271·9138	273·1859	274·4609	275·7390
27	277·0200	278·3040	279·5909	280·8809	282·1738	283·4696	284·7684	286·0702	287·3750	288·6827	289·9934	291·3071	292·6238	293·9434	295·2659	296·5915
28	297·9200	299·2515	300·5859	301·9234	303·2638	304·6071	305·9534	307·3027	308·6550	310·0102	311·3684	312·7296	314·0938	315·4609	316·8309	318·2040
29	319·5800	320·9590	322·3409	323·7259	325·1138	326·5046	327·8984	329·2952	330·6950	332·0977	333·5034	334·9121	336·3238	337·7384	339·1559	340·5765
30	342·0000	343·4265	344·8559	346·2884	347·7238	349·1621	350·6034	352·0477	353·4950	354·9452	356·3984	357·8546	359·3138	360·7759	362·2409	363·7090
31	365·1800	366·6540	368·1309	369·6109	371·0938	372·5796	374·0684	375·5602	377·0550	378·5527	380·0534	381·5571	383·0638	384·5734	386·0859	387·6015
32	389·1200	390·6415	392·1659	393·6934	395·2238	396·7571	398·2934	399·8327	401·3750	402·9202	404·4684	406·0196	407·5738	409·1309	410·6909	412·2540
33	413·8200	415·3890	416·9609	418·5359	420·1138	421·6946	423·2784	424·8652	426·4550	428·0477	429·6434	431·2421	432·8438	434·4484	436·0559	437·6665
34	439·2800	440·8965	442·5159	444·1384	445·7638	447·3921	449·0234	450·6577	452·2950	453·9352	455·5784	457·2246	458·8738	460·5259	462·1809	463·8390
35	465·5000	467·1640	468·8309	470·5009	472·1738	473·8496	475·5284	477·2102	478·8950	480·5827	482·2734	483·9671	485·6638	487·3634	489·0659	490·7715
36	492·4800	494·1915	495·9059	497·6234	499·3438	501·0671	502·7934	504·5227	506·2550	507·9902	509·7284	511·4696	513·2138	514·9609	516·7109	518·4640
37	520·2200	521·9790	523·7409	525·5059	527·2738	529·0446	530·8184	532·5952	534·3750	536·1577	537·9434	539·7321	541·5238	543·3184	545·1159	546·9165
38	548·7200	550·5265	552·3359	554·1484	555·9638	557·7821	559·6034	561·4277	563·2550	565·0852	566·9184	568·7546	570·5938	572·4359	574·2809	576·1290
39	577·9800	579·8340	581·6909	583·5509	585·4138	587·2796	589·1484	591·0202	592·8950	594·7727	596·6534	598·5371	600·4238	602·3134	604·2059	606·1015
40	608·0000	609·9015	611·8059	613·7134	615·6238	617·5371	619·4534	621·3727	623·2950	625·2202	627·1484	629·0796	631·0138	632·9509	634·8909	636·8340
41	638·7800	640·7290	642·6809	644·6359	646·5938	648·5546	650·5184	652·4852	654·4550	656·4277	658·4034	660·3821	662·3638	664·3484	666·3359	668·3265
42	670·3200	672·3165	674·3159	676·3184	678·3238	680·3321	682·3434	684·3577	686·3750	688·3952	690·4184	692·4446	694·4738	696·5059	698·5409	700·5790
43	702·6200	704·6640	706·7109	708·7609	710·8138	712·8696	714·9284	716·9902	719·0550	721·1227	723·1934	725·2671	727·3438	729·4234	731·5059	733·5915
44	735·6800	737·7715	739·8659	741·9634	744·0638	746·1671	748·2734	750·3827	752·4950	754·6102	756·7284	758·8496	760·9738	763·1009	765·2309	767·3640
45	769·5000	771·6390	773·7809	775·9259	778·0738	780·2246	782·3784	784·5352	786·6950	788·8577	791·0234	793·1921	795·3638	797·5384	799·7159	801·8965
46	804·0800	806·2665	808·4559	810·6484	812·8438	815·0421	817·2434	819·4477	821·6550	823·8652	826·0784	828·2946	830·5138	832·7359	834·9609	837·1890
47	839·4200	841·6540	843·8909	846·1309	848·3738	850·6196	852·8684	855·1202	857·3750	859·6327	861·8934	864·1571	866·4238	868·6934	870·9659	873·2415
48	875·5200	877·8015	880·0859	882·3734	884·6638	886·9571	889·2534	891·5527	893·8550	896·1602	898·4684	900·7796	903·0938	905·4109	907·7309	910·0540
49	912·3800	914·7090	917·0409	919·3759	921·7138	924·0546	926·3984	928·7452	931·0950	933·4477	935·8034	938·1621	940·5238	942·8884	945·2559	947·6265
50	950·0000	952·3765	954·7559	957·1384	959·5238	961·9121	964·3034	966·6977	969·0950	971·4952	973·8984	976·3046	978·7138	981·1259	983·5409	985·9590
51	988·3800	990·8040	993·2309	995·6609	998·0938	1000·5296	1002·9684	1005·4102	1007·8550	1010·3027	1012·7534	1015·2071	1017·6638	1020·1234	1022·5859	1025·0515
52	1027·5200	1029·9915	1032·4659	1034·9434	1037·4238	1039·9071	1042·3934	1044·8827	1047·3750	1049·8702	1052·3684	1054·8696	1057·3738	1059·8809	1062·3909	1064·9040
53	1067·4200	1069·9390	1072·4609	1074·9859	1077·5138	1080·0446	1082·5784	1085·1152	1087·6550	1090·1977	1092·7434	1095·2921	1097·8438	1100·3984	1102·9559	1105·5165
54	1108·0800	1110·6465	1113·2159	1115·7884	1118·3638	1120·9421	1123·5234	1126·1077	1128·6950	1131·2852	1133·8784	1136·4746	1139·0738	1141·6759	1144·2809	1146·8890
55	1149·5000	1152·1140	1154·7309	1157·3509	1159·9738	1162·5996	1165·2284	1167·8602	1170·4950	1173·1327	1175·7734	1178·4171	1181·0638	1183·7134	1186·3659	1189·0215
56	1191·6800	1194·3415	1197·0059	1199·6734	1202·3438	1205·0171	1207·6934	1210·3727	1213·0550	1215·7402	1218·4284	1221·1196	1223·8138	1226·5109	1229·2109	1231·9140
57	1234·6200	1237·3290	1240·0409	1242·7559	1245·4738	1248·1946	1250·9184	1253·6452	1256·3750	1259·1077	1261·8434	1264·5821	1267·3238	1270·0684	1272·8159	1275·5665
58	1278·3200	1281·0765	1283·8359	1286·5984	1289·3638	1292·1321	1294·9034	1297·6777	1300·4550	1303·2352	1306·0184	1308·8046	1311·5938	1314·3859	1317·1809	1319·9790
59	1322·7800	1325·5840	1328·3909	1331·2009	1334·0138	1336·8296	1339·6484	1342·4702	1345·2950	1348·1227	1350·9534	1353·7871	1356·6238	1359·4634	1362·3059	1365·1515

TABLE FOR CALCULATING THE STENGTH OF CAST-IRON BEAMS.

WHEN the table for facilitating the computation of cast-iron beams, which appears at page 499 of the present volume, was drawn up for insertion in the BUILDER, it was thought sufficient to limit the argument or depth of section, to about four feet, on the supposition that *that* would be found to embrace the usual range of practice. But in the supplement to that number in which the table is given, there is a description of a cast-iron bridge across the river Wharne, on the York and Midland Railway, where it is stated that the depth of the girders varies from four feet eight inches to three feet three inches. On seeing this, the author became impressed with the belief that by extending the table to a depth of five feet, and adapting it to sixteenths of an inch instead of tenths, its value as an instrument of calculation would be greatly enhanced, not only on account of its embracing a more extensive range, but because the common foot-rules are more generally divided *octogesimally*, than either *decimally* or *duodecimally*; and consequently, under this impression, he has with great labour computed the table which he now lays before the readers of the BUILDER, in the hopes that it will be found useful.

The principles and data on which the numbers depend are the same as those adopted for the table at page 499: and their accuracy has been ensured by the method of computation employed; they have been deduced from one another by the continued summation of the first and second order of differences, and a check was had at every eighth and sixteenth number by means of the previous table, which was computed and checked in a similar way; and in order that the checks should be rendered efficient, the decimals were maintained at their full extent throughout the operation, although they are tabulated only to four places.

The table is used in precisely the same manner as we have exemplified at pages 499 and 513, and need not therefore be again explained, but the application to other forms of sections now much approved of, will be the subject of another communication. T.

WESTMINSTER COURT OF SEWERS.

A VERY numerous meeting of the commissioners took place on Friday, the 7th instant. The cash at the bankers was reported to be 16,624*l.* 0*s.* 5*d.*

On an application for warrants of distress against certain inhabitants of the western division, the chairman said, "not to-day." Mr. Leslie called upon the chairman to say why he would not sign the warrants of distress or to let the Court be informed of the reason? and then proceeded to say that the inhabitants of the western division had been made to pay upwards of 16,000*l.* since February last, while the whole amount of the contractors' bills from Nov. 1844 to Michaelmas 1845, for the western division, amounted only to 1,288*l.* 7*s.* 11*d.* that 1360 of the inhabitants of the western division had been summoned to the Court to shew cause why warrants of distress should not be issued against their goods, and 245 warrants of distress had actually been signed by the commissioners. There being no reply, the matter dropped.

Nearly 4,500 feet of sewers of the new forms were granted to various applicants.

The clerk then read a letter he had received from the Under Secretary of State, of which the following is a copy.

Whitehall, 1st November, 1845.

SIR,—I am directed by Secretary Sir James Graham to call your attention to my Letter of the 13th August last, and to request that you will move the Commissioners of Sewers for Westminster and part of Middlesex to favour Sir James Graham, at their earliest convenience, with their observations on the allegations contained in the Pamphlet of Mr. John Leslie.—I am, Sir, &c.

(Signed) H. MANNERS SUTTON.

The chairman said the Court had appointed a committee in September to draw up observations on the pamphlet, in compliance with the request of Sir James Graham. That in consequence of the long period over which the pamphlet ranged, the committee had required many returns from their own officers, and returns also from the Holborn and Finsbury commissioners, and it took some time to prepare these returns; and one from the Holborn and Finsbury commission had only recently been received. At the last meeting of the committee, it had adjourned, that a draft report might be prepared; the draft report was prepared, and the committee would meet on Wednesday next (the 12th inst.) to settle it, and bring their laborious investigations to a close. He would therefore suggest that their answer to the letter of the Secretary of State be, that the committee had closed their investigation, and were preparing their report.

Captain Bague, and afterwards, Mr. William Donaldson, complained that Mr. Hertslet, the clerk, had printed and circulated the letter from Mr. Manners Sutton without having consulted the chairman. The chairman also intimated his disapprobation of the course pursued; all former chairmen had been consulted as to the printing of any paper, and also as to the business paper of the day, and it looked invidious that he, their present chairman, was to be the exception to the law and the practice. Mr. Leslie defended the course adopted. The clerk had received an important communication from the Secretary of State, requiring him to "move the commissioners," and he thought that the best way to move the commissioners, was to let them individually know that the Secretary of State wished them to move. What did the commissioners know about the proceedings of the committee? That committee had voted itself a secret committee; their minutes were closed to the eye of every commissioner: this was a power the committee itself had assumed, without asking the Court. He thought it a dangerous proceeding: he begged in the observation he now made on that secret committee, to be understood as feeling no anxiety about what the committee might report; he was so surrounded by facts, that he considered himself invulnerable. The chairman was anxious that the officers should have no will of their own, but this was not the law. The general statutes authorised the commissioners to elect a chairman at every meeting of the Court, and during the non-sitting of the commissioners, the clerk was the only legally known authority to communicate with. The practice in this Court had been otherwise: here the chairman had been supreme. Many years ago a bricklayer of the name of Gray, had obtained a nomination as a commissioner; he eventually became the chairman of the Court; he contrived to get two nephews of his of the name of Saunders nominated as commissioners; one of these nephews, George Saunders, an architect, subsequently became chairman of this Court, and for 28 years did almost as he liked. The officers had been the mere servants of the various chairmen; he felt satisfied that the commissioners generally would approve of the course Mr. Hertslet had adopted in apprising every commissioner of the letter from the Secretary of State. Mr. Gunter also defended the course pursued.

Mr. W. Donaldson handed in the following notice of motion for the next Court: "That the clerk do not issue any printed circular to the commissioners without the express order of the Court, or the sanction of the chairman."

Mr. Farlar stated that what had been said about the extraordinary powers exercised by the chairman of the Court was perfectly true. When he, Mr. Farlar, was first made a commissioner there was no business paper at all, sent to the commissioners; the chairman brought forward any subject just as he liked, or saw by the parties present that he could carry. The former chairman, Mr. Saunders, used to say when attacked by him, if you had known the Court, Mr. Farlar, when Mr. White was chairman, when his relatives where doing the work, then indeed you might have said it was corrupt. He thought Mr. Hertslet had taken the wise course to print and circulate the letter from the Secretary of State.

The Court then proceeded, "To consider the steps necessary to be taken in consequence of the resignation of Mr. George Hawkins, assistant surveyor. Mr. Leslie to move, that the vacancy in the office of assistant-surveyor be filled up by the appointment of Mr. John Phillips, now second clerk of the works."

Mr. Leslie called upon the Court to support the motion, and he thought they would do so without a dissentient voice, when they considered the course the several recent Courts had adopted. The forms of sewers which Mr. Phillips had made, and which had been so strongly urged upon the Court by the eminent testimonials in their favour, were now the forms adopted by the Court: so large a number as nearly 4,500 feet of sewers of these forms had been applied for and granted this day: who, then, so likely to see them carried out properly as the author of them? Mr. Leslie thought it right to put Mr. Phillips' abilities to the test as to his powers of surveying, levelling, and laying down a section; he had asked Mr. Dowley to allow Mr. Phillips the use of the necessary instruments and labourer for the purpose, which Mr. Dowley readily complied with, and on Monday the 3rd inst. the task set Mr. Phillips was performed. The survey selected was from the outlet of the sewer at the bottom of Northumberland-street, up that street along the Strand, Cockspur-street, Pall-mall, Cleveland-row, and diagonally across the Green-park to the Man-hole, opposite White Horse-street, where nearly all the northern drainage of the metropolis descended. The distance between the two points was about 5,400 feet, the fall was about 3½ inches per 100 feet. But the bottom of the outlet at Northumberland-street might be lowered to low water-mark, whereby an increased fall of 8 feet might be gained. The result of the task selected for Mr. Phillips was the drawing he then held in his hand, and which he would pass round the Court, that every commissioner might judge the sort of man he wished, for the public interest, to see placed in a situation of increased usefulness, and to be enabled to aid in carrying out those great improvements which the votes of recent Courts had made their own.

Captain Bague, R. N., had the greatest possible pleasure in seconding Mr. Leslie's motion. He thought Mr. Phillips had exhibited so much talent, that the Court would act most wisely in securing his services.

Mr. Gunter very warmly supported the motion. He had not the pleasure of knowing Mr. Phillips, but, from what he had seen of his abilities as a clerk of the works, he felt confident the appointment would be one most beneficial to the public. He understood Mr. Phillips was almost a self-educated man, with considerable talents, which he assiduously cultivated. It would be impossible, after seeing the admirable manner in which the task Mr. Leslie had set Mr. Phillips had been accomplished, to deny his ability. There was one circumstance connected with Mr. Phillips' history which gave him (Mr. Gunter) great pleasure, and it was, that Mr. Phillips, in those hours which many gave to pleasure, idle recreation, or the public-house, had devoted himself to the instruction of others; he had a large class, which he was teaching weekly practical geometry. Such a man deserved encouragement, and he would cheerfully vote for his appointment.

Mr. Le Breton rose to move an amendment, "That the office of assistant-surveyor, now vacant by the resignation of Mr. George Hawkins, be not filled up until the whole question of the efficiency of the surveyors' department, and the expediency of making a change therein, be considered at a special meeting, to be held to consider the same."

Mr. Allason very briefly seconded the amendment, which was supported by Mr. Hawkes and Mr. Harrison, who avowed, that if the amendment was not carried, he would vote for Mr. Phillips. A division being called for, the numbers were, for the amendment, 10; against it, 10. The casting vote was given by the chairman in favour of the amendment. The names of the commissioners voting were, for the amendment—Messrs. Allason, Boodle, jun., Beachcroft, Cantwell, Crace, W. Donaldson, W. B. France, Harrison, Hawkes, Le Breton, and Willoughby; against the amendment—Hon. F. Byng, Capt. Bague, Messrs. Branscombe, Cumberlege, Farlar, Fuller, Gunter, Leslie, Moss, and Wood.

The Court then ordered a Special Court on Friday, Nov. 14th, at one o'clock precisely, "To consider as to the efficiency of the surveyors' department, and as to the expediency of making a change therein."

TOWER HAMLETS COMMISSION.

TENDERS for sewer in Green Street, Bethnal Green: length, 980 feet; 4 feet by 2 feet 6 in; average depth of digging, 11 feet 6 inches.

Blackburn	£690
Crook	640
Curtis	634
Edwards	625
Stewart	620
Munday	617
Smith	600
Hill and Son	587
Jay	579
Livermore	543

Correspondence.

THE EGG-SHAPED SEWER.

SIR,—I feel much gratified with my fellow rate-payers, at the result of the decision of the commissioners of sewers for this division; the sixteen against five will, I hope, settle the point in dispute, as to the mud-holding sewer with perpendicular sides, and the egg-shaped sewer. One half the sum collected for rates within the last twenty years would, if it had been expended upon the new plan, have made the drainage perfect. I am sure the public will feel indebted to THE BUILDER for the assistance it has afforded in the good cause.

I am not looking at this as a local question only; the subject of proper drainage is now mooted throughout the nation, and we may hope to see the egg-shaped sewer introduced universally. As the egg-shape now in use in the Finsbury division will, I have no doubt, in time come into general use, it would be well if THE BUILDER could ascertain, who was the inventor of this shape, as I consider it important as an historical fact. Probably Mr. Roe, if applied to, would state whether it was his invention, or whether he received the idea from any other person.—I am, Sir, &c.

Westminster. E. E. E.

CONVEYANCE OF WATER.

SIR,—Your correspondent who inquires on this head, may obtain at small cost, terro-metallic pipes for "conveyance of water," at Mr. Peake's, Whitefriars.

These pipes do not injure pure water; they are exceedingly durable; socket pipes have been used to convey water long distances over undulating ground, terminating in one instance in a perpendicular rise of 40 or 50 feet to the tops of buildings. For such purposes each pipe is proved by hydraulic pressure. The plain or dead joints will do for your correspondent's purpose provided the soil is clayey. † †

NOTICES OF CONTRACTS.

[We are compelled by the interference of the Stamp Office to omit the names of the parties to whom tenders, &c., are to be addressed. For the convenience of our readers, however, they are entered in a book, and may be seen on application at the office of "The Builder," 2, York-street, Covent-garden.]

For building a new church at Tetbury, Gloucestershire.

For repairing or new paving the footways and carriage ways of certain streets and places in the parish of St. John the Evangelist, Westminster.

For the supply of 40 fathoms of yellow Deal ends to the Guardians of the Kensington Workhouse.

For the execution of the work forming the second division of the Dundalk and Enniskillen Railway, being a distance of 10 miles.

For the supply of 1,027, of 15-inch cast-iron socket pipes, measuring 3,080 yards, to the Commercial Gas-light Company, Stepney.

For the execution of the works forming the Burnley contract of the East Lancashire Railway. (Extension of time.)

COMPETITIONS.

Plans for the enlargement of the Suffolk General Hospital, and tenders for the execution of the work, are required by the Hospital Committee.

Plans, specifications, and estimates are required by the committee for the erection of the South Staffordshire General Hospital, Wolverhampton. The sum of 100*l.* will be given for the one selected.

The Provisional Committee of the National Glass Company of Ireland require plans and specifications, &c., for the erection of all the necessary Buildings, comprising an extensive manufactory for making crown (window) glass; also plans for an extensive manufactory of plate glass. 25*l.* will be given for each plan selected, or 50*l.* for both if to the same individual.

APPROACHING SALES OF WOOD, &c.

BY AUCTION.

At the Railway Tavern, Wallingford-road station: 2,000 clean Beech trees, of good growth; also a few lots of Ash and Cherry-tree timber, all now standing in Unhill-wood, four miles from Wallingford.

At Haselgrove, Queen Camel, Somerset: Upwards of 1,000 maiden Oak, Elm, and Ash timber trees, now standing.

At Garraway's Coffee-house, Cornhill: 628 logs and curls of St. Domingo Mahogany, being the entire cargo of the *Diadem*, just landed.

At Great Barton, near Bury, St. Edmunds: between 300 and 400 excellent spruce and larch Firs.

At Wainford's farm, Little Burdfield, Essex: 150 capital Elm timber trees; 50 ditto Ash ditto, and 10 ditto Oak ditto, now lying near the road side.

On the premises, Mortimer-street, Cavendish-square: A large and well-seasoned stock of Mahogany Wainscot, Rosewood, Pencil-Cedar, Lime tree and Fir timber.

TO CORRESPONDENTS.

"J. F."—*Our correspondent's proposed central terminus would not be sufficiently extensive. The communication is left for him at the publisher's, with thanks.*

"Young Beginner."—*We do not know a good "book on drawing and colouring architectural plans and elevations." Gwilt's Encyclopædia contains a course of mathematics.*

"Y. X. A."—*Articled pupils, under 21 years of age, are eligible as students of the Institute of Architects. They must submit specimens of their drawing, and be recommended by a Fellow. If the specimens are satisfactory, a subject is given them, which they are required to execute at the Institute: and if that also is satisfactory, they are admitted, on payment of one guinea per annum.*

"Polished Slate Chimney-pieces."—*A correspondent wishes to know where these can be seen.*

"Surveyor" and "J. G." *arrived too late for present week.*

"Complaint against a District Surveyor."—*We learn on inquiry, that the surveyor did not of himself lodge an information against the houses in question, but made the survey under higher authority: this seems materially to alter the question.*

"Chelsea Improvements."—*A correspondent directs our attention to what is being done in Chelsea under their new Act. We are fully aware of the works going on, and shall take an opportunity to allude to them.*

"T. L." (Improvement of Operatives) *next week.*

*** Correspondents are requested to address all communications to the EDITOR.

ADVERTISEMENTS.

CAUTION,—FRAUD.—BERDOE'S WATERPROOF OVER COATS and SHOOTING JACKETS.—It having come to the knowledge of W. B. that certain parties are offering for sale, as the above, garments which, although having attached to them W. B.'s name, and a fac-simile of his label, have not been manufactured by him; also various other attempts, similarly and fraudulently to mislead; intimation thereof is (to prevent disappointment and vexation) thus publicly given. The above really waterproof garments have been in extensive use seven years, and are now too well known to need description; and by those who have tried them they are regarded as sine qua nons. A large stock of first-rate garments for the Winter, in Llamas and other new materials, manufactured expressly for W. B. now ready. They are made and sold in London only, at 69, Cornhill (north side), and by W. B.'s Agents in various towns throughout the Kingdom.

Waterproof Cloaks, Capes, &c. for Ladies.

PRIZES IMPORTANT TO INVENTORS AND PATENTEES.

A GOLD MEDAL, value 100*l.* and a SILVER MEDAL, value 50*l.*, will be given by Mr. M. JOSCELIN COOKE. The Gold medal for the best Patent, and the Silver medal for the best Design taken out or Registered at the OFFICE for PATENTS and DESIGNS, 20, Half-Moon-street, between the 1st of November, 1844, and the 1st of June, 1846. The Prizes will be awarded by competent judges on the 10th June, 1846. The conditions to be observed, together with instructions, charges, and every information for obtaining Patents in England or Foreign Countries, or Registering Designs, will be forwarded gratis, on application to Mr. M. JOSCELIN COOKE, at the Office for Patents and Registration of Designs, 20, Half-Moon-street, Piccadilly, London.

T. SMITH AND SON'S

IMPROVED PATENT WATER-CLOSET,

HAS, after three years' experience, been pronounced by all who have introduced it, to be the most perfect machine of the kind ever brought under their notice, and fully supplying all requisites indispensible to the complete success of an apparatus of such acknowledged utility. Upwards of 2,000 of the improved water-closets have been fixed in various parts of the country since its first introduction, in every case with the most satisfactory results, as the numerous testimonials from influential parties will abundantly testify.

The desiderata of a perfect water-closet—a simplicity, cleanliness, and durability which are attained by the IMPROVED PATENT, with the additional recommendation of GREAT ECONOMY, since the machine, from the simplicity of its construction, cannot become impaired by any of those accidents which so materially affect the value of closets of the common construction.

The Patent Trap can be furnished to the ordinary pan-closets; but to obtain the full advantage of the invention, the Improved patent should be used in its complete form.

T. SMITH and SON are still engaged in appointing agents throughout the kingdom, to whom every information necessary for making and fixing are provided, as well as the various testimonials with which they have been furnished.

List of Agents already appointed.

Bridges, T. 14, Old Quebec-street, London.
Stocker and Curtis, 121, St. John-street, do.
Burgess, ——, More-street, Birmingham.
Lythall and Adney, Temple-street, do.
Newbold, B. G. do.
Stokes, J. C. do.
Barge, John, 88, London-road, Manchester.
Howard and Atkison, Deansgate, do.
Ward and Leech, 36, Brook-street, Davis-street, do.
Harrison and Son, 41, Chapel-street, Salford.
Fletcher, Chas. More-lane, Bolton.
Travers, John, Church-bank, do.
Holt, James, Hanover-street, Liverpool.
Knight and Nimmo, Renshaw-street, do.
Porter, Thos. and Co. Mercey-street, do.
Rigby, John, York-street, do.
Bailiff Stainton, Birkenhead.
Crump, Thos. Derby.
Goold, Thos. Leamington.
Johnson, Timothy, Coventry.
Hickman, C. R. Oxford.
Kirk, S. Sleaford, Lincolnshire.
Adams, George, Market-place, Margate.
Marshall, Chas. Lincoln.
Norman, Thos. Leicester.
Rhodes, Samuel, Nottingham.
Totley, William, Wolverhampton.
Wood, Benjamin, Brighton, Sussex.
Gore, William, Stratford, Essex.
Morley, J. Greenwich.
Broomhead, John, Bakewell, Derbyshire.
Daniel, Robert, Chesterfield, do.
Roose, Josh. Ashbourn, do.
Smith, J. Belper, do.
Parker, John, Cromford, do.
Hunt, Henry, Banbury, do.
Brown, William, Horncastle, Lincolnshire.
Bellamy, N. P. Louth, do.
Driffell, Thomas, Spalding, do.
King, W. Gainsborough, do.
Melton, Edward, Market-Ravin, do.
Barnes, Henry, Stamford, do.
Marriott, Christopher, Southwell, Nottinghamshire.
Pawsor, P. C. Newark, do.
Burwell, H. Luthworth, Leicestershire.

PROFESSOR KELLER'S POSES PLASTIQUES.

ROYAL ADELAIDE GALLERY.—This day, and during the week, Professor Keller will exhibit at the Adelaide Gallery his Grand Tableaux Vivans from the Ancient Masters, which have received so largely the encomiums of the press. Every morning at half-past three, and in the evening at nine o'clock. Great efforts have been made to add to the effects of this exhibition. A variety of new subjects have been added to those already presented to the public The Concerts as usual. Also Pilbrow's Atmospheric Railway model, with explanatory lecture.

SASHES, SHOP FRONTS, &c.

JOHNSON and PASK thank the public in general for the very liberal support they have received since they commenced manufacturing for the trade, and beg to state that they continue to manufacture sashes, glazed complete, at 11½d. per foot, shop-fronts with the best British plate-glass. All kinds of joiners' work cheaper than any other house in the trade.

1, Amwell-street, Clerkenwell.

WINDOW BLINDS;

ORNAMENTAL WIRE-WORK, FLOWER-POT STANDS, &c.

To Architects, Builders, Contractors, Upholders, and others.

M. H. BUSBY, NEW VENETIAN HOUSE,

7 and 8, Anderson's Buildings, City Road, London,

Manufacturer of every Description of Window Blinds on the most approved principles, namely, the Spanish, Oriental, Florentine, Louvre, and Venetian Sun Shades, for the exterior; and Venetian Dwarf, Metallic Gauze, Perforated Zinc Blinds, Transparent, Landscape, and Holland Blinds on Springs, Patent and Common Rollers for the Interior; Blinds for Shop Fronts, Plain and Ornamental, on the most Improved plans. Old Blinds Altered, Renovated, and Refixed. A variety of Flower-pot Stands always Ready. Rustic, Portable, and other Garden Seats and Stools; Wire-work for every purpose useful and ornamental.

VENETIAN BLINDS FOR EXPORTATION.

COMPOSITION FOR WRITING WITH STEEL PENS.

STEPHEN'S WRITING FLUIDS.—These Compositions, which have so remarkably extended the use of the STEEL PEN, are brought to very great perfection, being more easy to write with, more durable, and in every respect preferable to the ordinary ink. In warm climates they have become essential. They consist of—A BLUE FLUID, changing into an intense Black colour.—A PATENT UNCHANGEABLE BLUE FLUID, remaining a deep Blue colour.—A SUPERIOR BLACK INK, of the common character, but more fluid.—A BRILLANT CARMINE RED, for Contrast Writing.—A CARBONACEOUS RECORD INK, which writes instantly black, and being proof against Chemical agents, is most valuable in the prevention of frauds.—Also a new kind of MARKING INK for Linen, and inkholders adapted for preserving ink from evaporation and dust.—Sold in Bottles, of various sizes, by all Stationers and Booksellers.—Be sure to ask for Stephens' Writing Fluid.

N.B.—These unchangeable Blue Fluids are Patent articles. The public are therefore cautioned against imitations, which are infringements; to sell or use which is illegal.

STEPHENS' SELECT STEEL PENS.

The utmost possible care having been bestowed upon the manufacture of these articles so as to procure the highest finish they can be confidently recommended both for flexibility and durability. Also

STEPHENS' RULING and MECHANICAL DRAWING INK, for Engineers, Artists, and Designers.

This article will be found superior to the best Indian Ink for the above purposes. It does not smear with Indian-rubber or wash off with water. It flows freely from the drawing pen, and never corrodes or encrusts it. It may be used on a plate or slab, with a camel's hair brush, deluting it with water, or thickening it by drying, as required. It has the advantage of being ready for immediate use. Sold in conical-shaped Bottles, convenient for using from, without any Stand, at 6d. each.

All the above articles are prepared by HENRY STEPHENS, the Inventor, 54, Stamford-street, Blackfriars-road, London, and sold by Stationers and Booksellers.

COURT OF SEWERS FOR WESTMINSTER, AND PART OF MIDDLESEX, No. 1, Greek-street, Soho-square.

TO BUILDERS and Others interested in buildings or in ground for building upon, within the district under the jurisdiction of this Court, drained by watercourses falling into the river Thames, between the city of London and the parish of Fulham.

The Commissioners hereby give notice, that by an Act of the 47th Geo. III. (chap. 7, local) it is required that, previously to the making of any new sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry or drain off water from any house, building, yard, or ground, into any sewer under their management, or within their jurisdiction, a notice in writing shall be given to them, or to their clerk at their office, and that such new sewer or sewers shall be constructed and made in such manner and form as shall be directed by the said Commissioners, and not otherwise.

And, in order to prevent the serious evils and inconveniences that must arise from ground proposed to be built upon being excavated at too great a depth, the Commissioners have directed that, upon application being made at this office previously to the excavation of such ground, information shall be given as to the lowest depth at which the same can be drained.

And the Commissioners do also give notice that, whenever the lower floors or pavements of buildings shall have been laid so low as not to admit of their being drained with a proper current, they will not allow any sewers, or drains into sewers, to be made for the service of such buildings.

It is recommended to all persons about to purchase or take houses, or other premises, to ascertain whether such premises have separate and distinct drains into common sewers.

All petitions must be delivered at this office at least three clear days before they are presented to the Commissioners; and all such petitions will be called on in the order of their application, and the name of any party not present when called on to support the application will be struck out, and the proceedings must in consequence be commenced de novo.

All communications made with any sewer without leave of the Commissioners will be cut off, and the parties making the same will subject themselves to a fine.

The provisions of the Metropolitan Buildings Act (7 and 8 Victoria, c. 84) do not supersede the authority of the Commissioners of Sewers in the above respects, but their powers are expressly reserved, and their regulations made subservient to the purposes of that Act. The execution of such works, under the superintendence of the district surveyor alone, cannot therefore warrant the making of any sewers or drains within this commission, nor relieve the parties making them from the penalties above mentioned.

By order of the Court,

LEWIS C. HERTSLET, Clerk.

POLONCEAU'S BITUMEN PAVEMENT for paving Foot walks, Terraces, Garden walks, Stables, Coach Houses, Granaries, Corn Stores, and Salt Warehouses. For the exclusion of Damp and Vermin in Basements it is particularly adapted, and for Roofing Dwelling Houses, Portices, Balconies, and Sheds.

Price 3s. 6d. per square yard.

BITUMEN for covering the Arches of Bridges, Culverts, &c. &c. on Railways and other places (with instructions for laying it down), may be had at the rate of 45s. per ton, by applying to JOHN PILKINGTON, 15, Wharf-road, City-road.

TO ARCHITECTS.

IN consequence of many complaints having been made to the Company, by Architects, of a spurious material having been used in the execution of Works where the SEYSSEL ASPHALTE had been specified for, the Directors, with a view to ensure the fulfilment of any such specification, have authorized CERTIFICATES to be granted to Builders where the

SEYSSEL ASPHALTE

has been used. For the purpose of securing the use of the Genuine Article, Architects and others are recommended to insert in their specifications the "Seyssel Alphalte, Claridge's Patent," and not merely "Asphalte," or "Bitumen," as in many cases where these terms have been used, gas-tar and other worthless and offensive compositions have been introduced. I. FARRELL, Secretary.

Stangate, near Westminster Bridge, Jan., 1845. Seyssel Asphalte Company.

Books of Instructions for Use may be had at the Office of "The Builder," and of all Booksellers in Town and Country, price 1s.

*** In proof of the necessity of the above advertisement, it may be mentioned, that it has come to the knowledge of the Directors, that in certain works which have been executed by Messrs. CURTIS, builders, of Stratford, a spurious material has been used by them, contrary to the specifications, which expressly mentioned, that "Claridge's Asphalte" was to be used.

Also in the case of a work at Lewisham executed by Messrs. ROBERT and DANIEL YOUNG, of 10, Crown-row, Walworth-road, where Seyssel Asphalte was specified for, a spurious article was nevertheless laid down by them.

GAS LAMPS, FITTINGS, &c.

A NEW ASSORTMENT of HYDRAULIC GAS PENDANTS, new pattern Opal Gas Brackets, &c.—C. DEBAUFER and SON have on view a new assortment of hydraulic Gas Sliding Pendants, opal and brass handsome Gas Brackets, Gas Pillars, newest patterns, and Chandeliers, at their Manufactory and Showroom, 10 and 11, Creed-lane, St. Paul's; adapted for public buildings, shops, and private houses. — N.B. Architects, Builders, &c., wishing to fit up at shops, houses, &c., are requested to take an early opportunity of inspecting their stock. —Estimates given from 5 lights to 1,000 at wholesale prices.

MOREWOOD AND ROGERS' PATENT GALVANIZED TINNED IRON.

T. W. BEALE begs to acquaint the public that he is prepared to lay roofing, plain or corrugated, fix pipes, gutters, &c. Also chimney-tops and ventilating cowls of every description; also water and oil cisterns, of this incorrodible and fireproof metal. He manufactures all kinds of baths, as hip, shower, Roman, open, slipper, sponging, foot, children's, and self-heating baths; also toilet-cans and pails, slop-pails, coal-scuttles, cash and deed-boxes, and fire-proof safes of every description, 10 per cent. cheaper than any house in London.

The PATENT GALVANIZED TINNED IRON is applicable to the following uses:—The Lining of Ships' Store Rooms, Ships' Water Buckets, Water Jugs and Receivers, and for almost every purpose to which zinc, tin, copper, brass, or any other metal is now applied; is more durable, and manufactured at much less expense. An experienced workman sent to any part of the kingdom. All orders punctually attended to. For particulars, apply to T. W. BEALE, 46, Bridge House-place, Newington Causeway.

By Her Majesty's Royal Letters Patent.

MOREWOOD and ROGER'S PATENT GALVANIZED TINNED METAL.— This article was at first sold under the name of Galvanised Tin Plates, but the Patentees finding that the public, in some instances, overlooking the word Tin, confounded the article with Galvanised Iron, and that the character of their metal has thereby sustained injury, are desirous of giving it a name so distinctive as to prevent such mistakes, and consequent disappointment to purchasers in future. They therefore respectfully request purchasers to inquire for MOREWOOD and ROGER'S PATENT GALVANIZED TINNED IRON. In order to enable the public readily and at first sight to distinguish between the two metals, it may be well to inform them, that Galvanised Iron has a plain zinc-like appearance, while M. and R.'s Patent Galvanized Tinned Iron has a smooth crystalline surface.

MOREWOOD and ROGER'S PATENT GALVANIZED TINNED IRON, Patronized by the Admiralty and the Honourable Board of Ordnance, being extensively used in her Majesty's Dock-yards, at the Tower, and elsewhere, for every variety of Roofing, and other purposes, where a strong, light, cheap, and durable material is required.

It has been found by experience that this article is beyond all comparison superior to zinc; possessing, as it does, all the advantages arising from the strength and firmness of iron, combined with perfect immunity from rust; whilst it is free from the very serious objection which applies to zinc, viz. its contraction and expansion, consequent upon every change of temperature, and from which circumstance leakage must of course result.

This material is not likely to be destroyed by fire, as is the case with zinc and lead, which melt and run down, thus freely admitting fresh air to the fire, and causing it to burn more fiercely. It is, therefore, obviously well adapted for all the purposes above-named, and most importantly so, when there is the possibility of fire. It is also peculiarly suitable for chimney-tops, gutters, spouting, and out-door work generally, possessing the strength of iron, without its liability to corrosion. It is by far the most economical metal roofing that can be obtained, in consequence of its strength, as it may be laid without boards, and upon the lightest rafters.

This mode of preserving metal from rust does not only apply to sheet-iron, but also to manufactured iron in any form, as bolts, nuts, hinges, nails, &c. &c.

For full Particulars apply to S. HOLLAND, 34, Gracechurch-street.

RAIN WATER PIPES, Heads, Shoes, and Elbows, Half-round and O G Gutters, Sash Weights, Railing Bars, Sink and Stable Traps and Gratings, Air Bricks, Coal Plates, &c.; Gas and Water Pipes from 1¼ in. to 12 in. in diameter, with Bends, Branches, Syphons, and Lamp Columns; also Hot-water Pipes, with all the usual connections. A large Stock of the above Castings at JONES'S Iron Bridge Wharf, and No. 6, Bankside, Southwark.

HENDRY and GLOVER, IRONFOUNDERS, beg to inform their customers that they have removed their Foundry (from Smart's-buildings) to CHARLES-STREET and 168, DRURY-LANE, where they have adopted every improvement to enable them to compete successfully in quality, price, and punctuality. They have also an extensive and well-arranged stock of patterns for every description of Castings.

R. W. PIPES.

Messrs. NEILSON and MITCHELL beg to inform Builders that they have always on hand, at their premises, 15, Wharf-road, City-road, a large assortment of R. W. Pipes, Guttering, Sash-weights, &c., which they are disposing of at very low prices.

Castings of every description done to order.

BALLUSTERS.

REDUCTION IN THE PRICE OF

BUNNETT AND CORPE'S

PATENT REVOLVING IRON SHUTTERS.

THE validity of this Patent being completely established, the Patentees have much pleasure in stating that the very extensive demand, and the employment of improved machinery in the manufacture, have given them an opportunity (of which they gratefully avail themselves) of making a considerable reduction in the price of this well-knownand tried invention, thereby rendering them the cheapest as well as the best iron shutters in use. Every improvement suggested by practical skill and most extensive application has been adopted, and no effective REVOLVING IRON SHUTTER can be constructed without infringing B. and C.'s patent. These shutters can be applied horizontally, either above or below the window, or vertically, as introduced by BUNNETT and CORPE, in some of the largest establishments: they are made with bent or corrugated laths, if required.

BUNNETT and CORPE also manufacture

REVOLVING WOOD SHUTTERS,

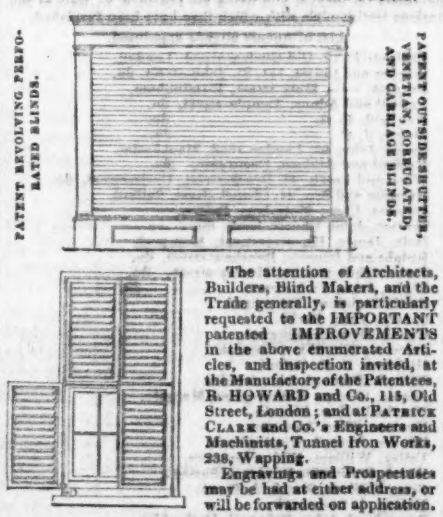
with their patent raising machinery, or with counterbalance weights, and with proper metallic hinges, without which no shutters can be safe or durable.

BUNNETT and CORPE are likewise Patentees and Manufacturers of METALLIC SASH-BARS, MOULDINGS, &c., IN BRASS, COPPER, OR ZINC, FOR SHOP FRONTS, WINDOWS, SKYLIGHTS, AND VARIOUS OTHER PURPOSES.

Shop Fronts fitted in a superior manner with Iron Shutters, Patent Brass or Zinc Sashes, Moulded Engraved Stall Board Plates, best Plate Glass, and internal Brass Fittings of all kinds, on the most advantageous terms. Estimates given and contracts taken in Town or Country.—All kinds of metal works executed to any design. Metal Drawing, Rolling, and Stamping for the Trade. OFFICE, 20, LOMBARD-STREET, LONDON. WORKS, at DEPTFORD, KENT.

IMPROVED PATENT CONVEX IRON REVOLVING SAFETY SHUTTERS.

PATENT SAFETY IRON SLIDING SHUTTERS.



The attention of Architects, Builders, Blind Makers, and the Trade generally, is particularly requested to the IMPORTANT patented IMPROVEMENTS in the above enumerated Articles, and inspection invited, at the Manufactory of the Patentees, R. HOWARD and Co., 115, Old Street, London; and at PATRICK CLARK and Co.'s Engineers and Machinists, Tunnel Iron Works, 238, Wapping.

Engravings and Prospectuses may be had at either address, or will be forwarded on application.

The great importance of stength and stiffness in the Laths of Revolving Iron Shutters, when required for security, is so obvious, that it is only necessary to point out the fact that, the Patent Convex Laths are 12 times stronger than the ordinary flat Laths (as shewn by the engravings and prospectus), to ensure their general adoption. Revolving Iron Shutters made of the common flat laths, at a very considerable reduction of price.

CAUTION.—The Patentees beg to caution all persons against Making or Using Bent Laths for REVOLVING IRON SAFETY SHUTTERS, so as to obtain increased strength or stiffness; as they thereby render themselves liable to legal proceedings for infringing this patent.

Licenses Granted

TO BUILDERS AND CARPENTERS.

A Considerable saving will be effected in the purchase of IRONMONGERY, by applying at F. R. WILLIAMSON'S Wholesale Warehouse, No. 35, Chiswell-street, Finsbury-square, near Whitbread's Brewery.

Best Patent Cut Clasp.

3d. 4d. 6d. 8d. 10d. 20d.
5d. 6½d. 7½d. 11d. 1s. 4d. 2s. per 1000.

Best Sheet Floor Brads 14s. 6d. per cwt.
Best Town Glue 44s. per cwt. Do. Scotch 54s. per cwt.

Best Patent Sash Line.

1 2 3 4 5 6
4s. 3d. 5s. 6s. 6d. 7s. 6d. 10s. 12s. per gross.

Elliptic Stoves, 3d. per inch. Registers, 6d., 7d., 8d. per inch.
Self-acting Kitchen Ranges with Oven and Back Boiler.

Wrought Bars and Bright Fittings.

3 ft., 3l. 3s. 3 ft. 6 in., 3l. 12s. 6d. 4 ft., 4l.

Lists of Prices had on application at the Warehouse; if by letter prepaid, inclosing postage stamp.

R. HENLY & Co., WHOLESALE IRONMONGERS, and MANUFACTURERS of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen-Ranges, with back Boiler and Oven, and Wrought Bars:—

3 ft. 3 ft. 3 in. 3 ft. 6 in. 3 ft. 9 in. 4 ft.
3l. 6s. 3l. 13s. 3l. 16s. 4l. 4l. 10s.

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

3 ft. 3 ft. 3 in. 3 ft. 6 in. 3 ft. 9 in. 4 ft.
5l. 6l. 15s. 6l. 5s. 6l. 10s. 7l.

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 8½d., and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

GOOD AND CHEAP IRONMONGERY.

CARPENTERS, BUILDERS, CABINET MAKERS, SMITHS, &c., are invited to call at G. WARBURTON and Co.'s Ironmongery warehouse, 146, Tottenham Court-road, and they will by so doing effect a considerable saving in all articles of good general ironmongery.

G. WARBURTON and Co., as a sample of their prices, beg to quote a few as under, at the same time assuring their friends and the public generally that every article will be equally reasonable.

Cast Butt Hinges.

1½ in. 1¾ in. 2 in. 2½ in. 2½ in. 3 in.
7½d. 9½d. 1s. 1s. 2d. 1s. 4d. 2s. 1d. per dozen pair.

1½ in. Best Frame Pullies, 1s. per dozen.
Best White Sash Line, 6d. per dozen knots.

Best Patent Sash Line.

No. 1 2 3 4 5 6
4s. 3d. 5s. 6s. 6d. 7s. 6d. 10s. 12s. per gross,

G. W. and Co. beg also to intimate that they are just adding Tools from the first manufacturer in Sheffield to their present stock.

Observe the address, G. WARBURTON and Co., wholesale and retail ironmongery warehouse, sign of "the Padlock," 146, Tottenham Court-road, ten doors from the New-road.

TO ARCHITECTS, BUILDERS, BRICKMAKERS &c.,

PUMPS of Superior CONSTRUCTION, bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICKMAKERS' PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to 12-inch bore, kept for Hire.

BENJ. FOWLER, 63, Dorset-street, Fleet-street

By Her Majesty's Royal Letters Patent

BAILLIE'S

PATENT ROUNDED RIM LOCKS,

WITH SECRET AND SECURE FIXINGS.

THIS CHEAP and USEFUL ARTICLE, obviating the unsightly appearance and insecurity of the common rim lock, can be obtained of any respectable ironmonger in town or country, or from the sole manufacturer, Mr. EDWARD WRIGHT, Wolverhampton.

TO ARCHITECTS AND BUILDERS.

DOOR SPRINGS AND HINGES.—GERISH'S PATENT DOOR SPRINGS, for CLOSING every description of DOOR, consists of Single and DOUBLE-ACTION BUTT HINGES in Brass and Iron for Doors to open one or both ways, and Rising Hinges for the convenience of Doors opening on uneven Floors. Likewise Swing Centres, which consist of a combination of power unequalled by any made at present. Manufactured by F. W. Gerish, East-road, City-road; and sold by all respectable Ironmongers in the United Kingdom.

TO ARCHITECTS AND BUILDERS.

COLLINGE'S PATENT HINGES.—Sole Manufactory, 64, BRIDGE-ROAD, LAMBETH, where a great variety are always on view, for Church, Park, Coach-house, and all other Doors and Gates, of large or small dimensions, a gate of a ton in weight moving with these hinges as easily as a wicket; they are also admirably adapted for drawing-rooms, being highly ornamental, and folding-doors fitted with them may be removed and replaced in an instant. Rising and spring Hinges, also double-action Butts on the most improved principle, and very superior Fastenings for exterior Gates, at moderate prices. To be seen at Charles Collinge and Co's Patent Axletree, Sugar-mill and Spherical-hinge Manufactory, 64, Bridge-road, Lambeth

TO ARCHITECTS AND BUILDERS.

The PATENT ALBERT WEATHER-BAR for simplicity and effect supersedes any thing of the kind yet offered to the public. The expense varies from 18s. to 25s. Invented and manufactured by T. WILKINSON and Co., Ironmongers, 77, Regent-quadrant. T. W. also executes all kinds of Iron-works,

Staircases, Warming by Hot-water, Fitting up Stoves and Ranges of all kinds; also Bell-hanging extensively executed. Estimates given.